American Gas Journal

NOVEMBER, 1958 | Only Magazine Edited Exclusively for the Gas Distribution Industry

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ALUMINUMCASE METERS

AL-250

- Light weight reduces shipping, handling & setting costs.
- One-piece aluminum alloy pressure die-cast body... 5 psi working pressure.
- Molded, 3-convolution Duramic diaphragms for all fuel gas services.
- Modern design and attractive appearance insures customer acceptance.

American AL-250 Aluminumcase meter, rated at 250 cfh, operates at only 7 revolutions per cubic foot for sustained accuracy through greater power and slow-speed operation. Ideal for home heating and small commercial loads.

American 5B-225 Aluminumcase meter, rated at 225 cfh, operates at the conventional nine revolutions per cubic foot and is comparable with the standard 5B Ironcase meter... for most domestic services.

5B-225

AMERICAN® METER COMPANY
INCORPORATED (ESTABLISHED 1836)

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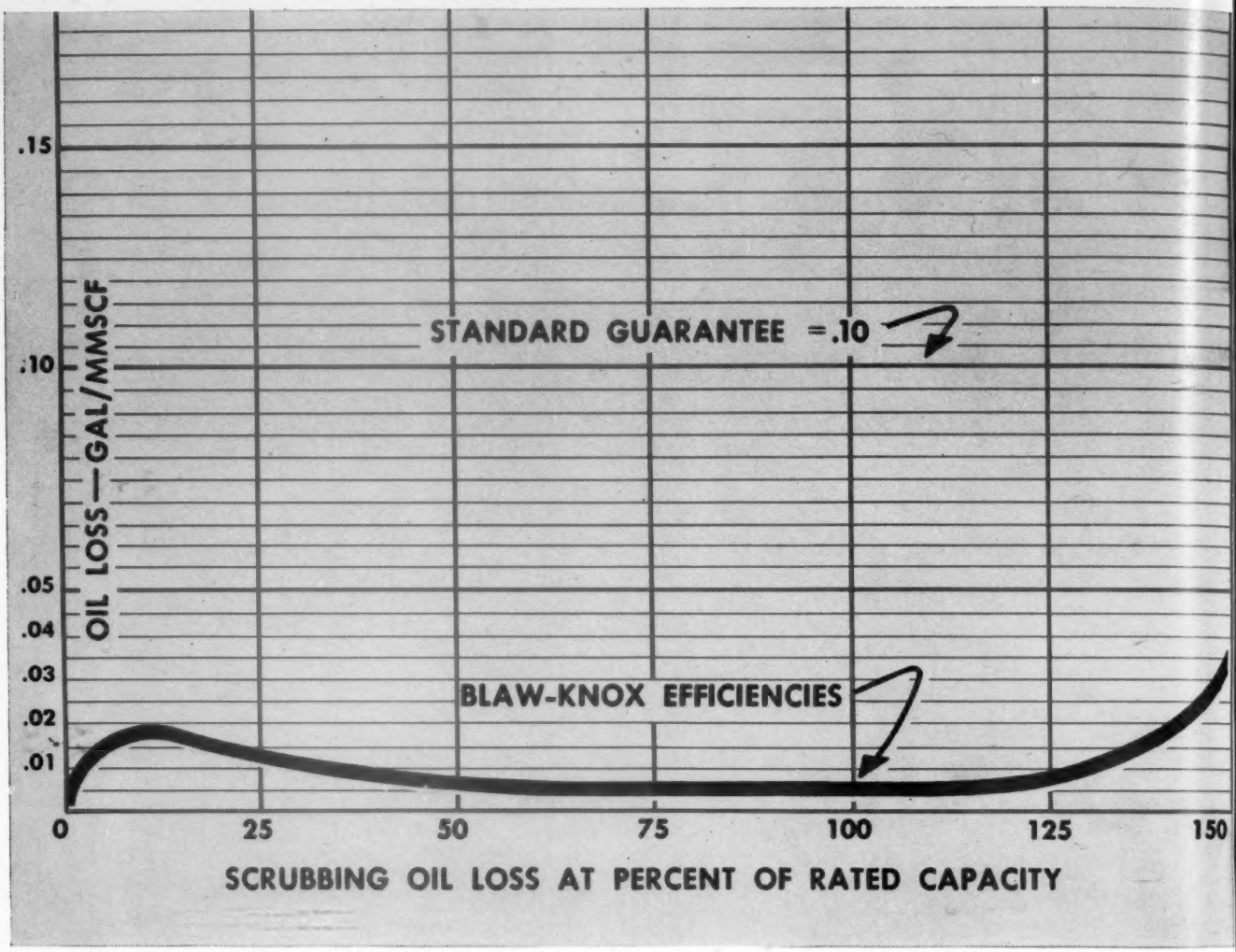

Now you can compare gas cleaner efficiencies with accuracy

Laboratory and field tests prove that the new Blaw-Knox Gas Cleaner has the best efficiencies at the widest range of gas flow. Three hundred individual tests plus six weeks of actual on-the-line field operation have been tabulated. The remarkable results are shown graphically in this illustration.

Through the entire range of the new Blaw-Knox Gas Cleaner the scrubbing oil loss at rated capacities is less than .02 gallons per million standard cubic feet of gas.

Accurate efficiencies of gas cleaners should be known before the decision to buy is made. Judge gas cleaners not only on how completely foreign particles are removed (Blaw-Knox can do this down to less than one micron), but also on how oil-free the down-stream gas actually is.

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BLAW-KNOX COMPANY
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1543 Fillmore Avenue, Buffalo 11, New York

Established 1859

American Gas Journal®

ONLY MAGAZINE EDITED EXCLUSIVELY FOR THE GAS DISTRIBUTION INDUSTRY

November, 1958 **100th Year of Publication** Vol. 185, No. 12

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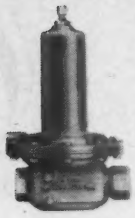

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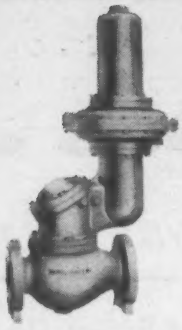
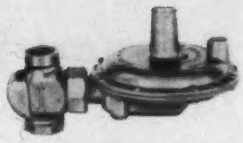


CBV—OFFSET



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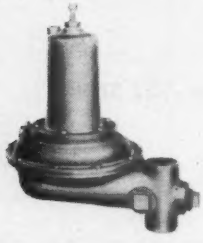
THE MOST ECONOMICAL—IN TERMS OF SERVICE

Reliance GAS REGULATORS



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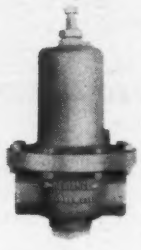

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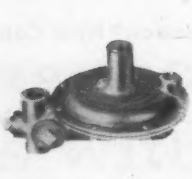

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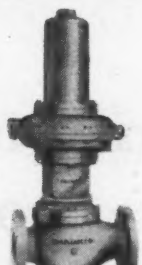

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There's a RELIANCE Regulator for every application...Commercial, Industrial and Domestic. When you specify regulators made by RELIANCE, you are assured of expert design and engineering, precision manufacture and testing, and *all-around reliability.*

Nearly half a century of *specialized* regulator experience serving the Gas Industry.

MAKE GAS BEHAVE WITH RELIANCE REGULATORS

sustained accuracy with AMERICAN METERS

AMERICAN® METER COMPANY

INCORPORATED (ESTABLISHED 1836)

AMERICAN METER CO 1836 MEASUREMENT ENGINEERS

RELIANCE REGULATOR DIVISION

ALHAMBRA, CALIFORNIA

American Gas Journal

Established July 1, 1859

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Printed in U.S.A.

Mcf

A.G.A. is discontinuing sponsorship of the Mrs. America Program. At a recent meeting of the A.G.A.'s general promotional planning committee, decision was reached for a "thumbs down" on 1959 support of the promotion. Observers note that increasing costs of program without comparable increase in results contributed greatly to decision, plus a host of other reasons. Gas utilities sponsoring the Mrs. America Program can still use it—until final deadline of midnight, December 31, 1958, when all gas industry sponsorship ceases.

Denial of two big gas export bids was made by Alberta Oil and Gas Conservation Board, which based its decisions on proved reserves only. Turned down were requests (totaling 5.5 trillion cu ft in a 25-year period) from Alberta & Southern Gas Company (for 4.2 trillion cu ft) and Westcoast Transmission Company (for 1.3 trillion cu ft). The A&S gas would go to California and Montana markets, the Westcoast gas to Pacific Northwest states. The board estimated, on the basis of estimated proved reserves of 23.3 trillion cu ft, that only 4.1 trillion cu ft surplus remained. It gave the two firms until December 31, 1958, to pare bids for the surplus, stating that it could then issue export permits to either or both firms, subject to suitable terms and conditions.

Long Island Lighting Company has entered into a 20-year contract with Valley Gas Transmission, Inc., in South Texas for purchase of natural gas in amounts up to 32,500,000 cu ft per day. Initial deliveries of 17,500 Mcf per day will begin in March 1959, and full amount will be taken by January 1960. LILCO president John J. Tuohy noted that "though it would be easier . . . to purchase gas from a pipeline company, the purchase in Texas will result in helping LILCO maintain for the foreseeable future a low price for natural gas." Agreement has been reached with Transcontinental Gas Pipe Line Corporation to transport the gas from Texas to New York.

Reimbursement to utilities for relocation of facilities due to new *interstate* highway construction remains a muddled picture. Here's the score on recent rulings and litigation: TEXAS—district court ruling upheld new Texas law providing full reimbursement. Ruling has been appealed. Decision may save cities and utilities as much as $100,000,000; FLORIDA—state attorney general's office has upheld 1957 law permitting state payment of entire relocation costs on interstate projects. Utilities would pay all costs on non-interstate projects; TENNESSEE — state supreme court ruled unconstitutional a new state law requiring state to reimburse utilities, reversing a lower court ruling appealed by state highway commission; NORTH DAKOTA—state highway commission has filed suit contesting constitutionality of 1957 state law requiring reimbursement to utilities; WASHINGTON—privately-owned public utilities have launched campaign for a state law on reimbursement. The state has already agreed to pay relocation costs of municipally-owned utilities in Seattle and Tacoma.

Accelerated write-offs on plant expansion for tax purposes, provided under a 1954 federal law, is being urged for California public utilities by that state's attorney general's office, which has filed petition with the California PUC asking that the utilities be compelled to do so. Contention is that this would permit lower consumer rates. Utilities have noted that, initially, rates would be lower, but in subsequent years, rates would have to be much higher to meet increased income taxes when depreciation deductions are at lowest level.

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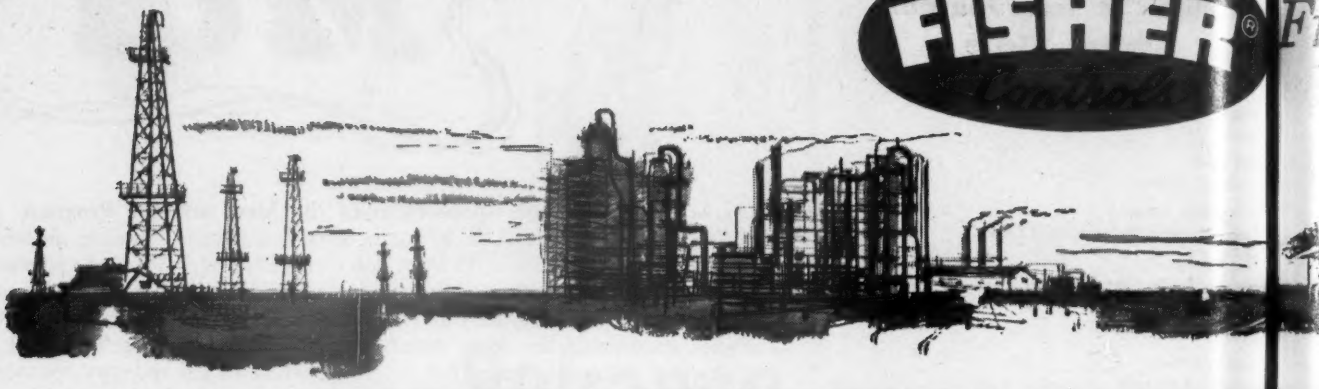
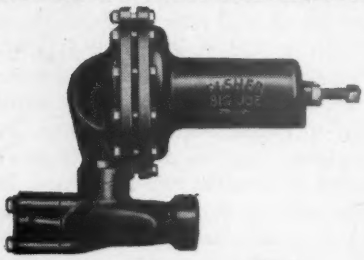
FISHER® Controls



SERVICE AND FIELD REGULATORS



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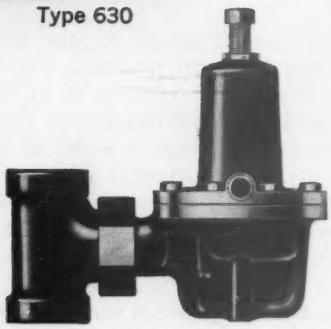

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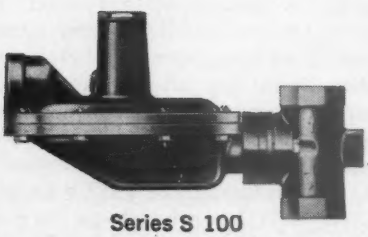

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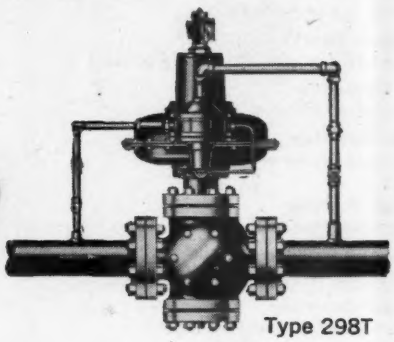
DISTRIBUTION REGULATORS

Series 99



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HIGH PRESSURE REGULATORS

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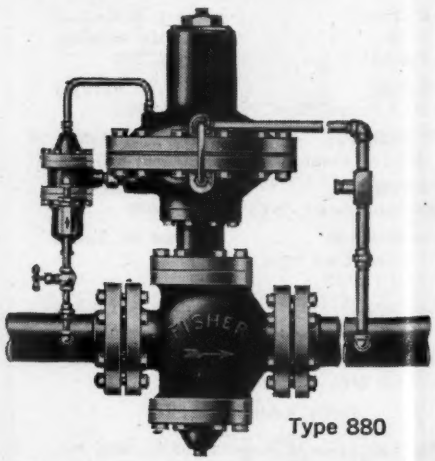

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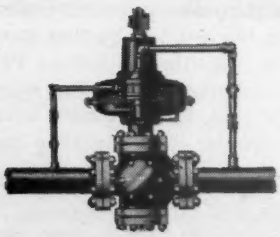
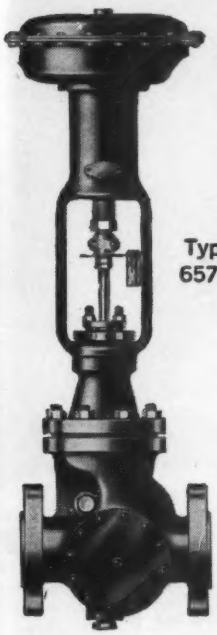


IF IT FLOWS THROUGH PIPE ANYWHERE IN THE WORLD . . . CHANCES ARE IT'S CONTROLLED

point in the gas industry

From the gas well...
to the gas consumer...

METER RUN VALVES



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Today when an experienced gas man says, "Let's install a Fisher", he knows from the experience of past installations that Fisher regulators are engineered to stand up to the job—without pampering or undue servicing. Whatever the control point, from the wellhead to the consumer, there's a Fisher precision control regulator to handle the transmission and distribution of gas safely and surely. More than three-quarters of a century of close association with the gas industry has given Fisher engineers an intimate knowledge of the industry's control problems.

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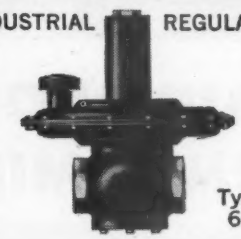

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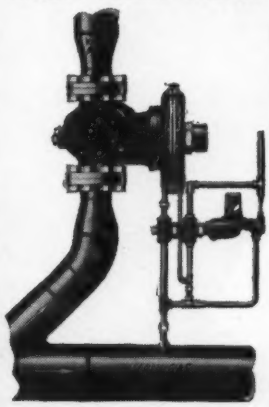
SAFETY RELIEF VALVES



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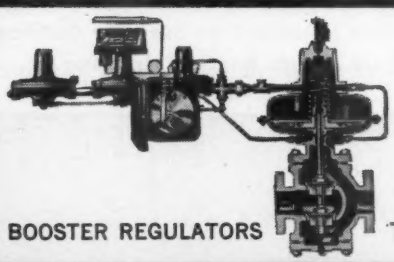
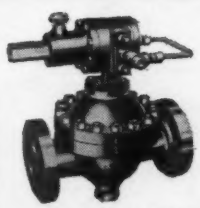


PRESSURE BOOSTER REGULATORS Type 298—831 LTC



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SINCE 1880

FISHER GOVERNOR COMPANY
Marshalltown, Iowa/Woodstock, Ontario/London, England

REPAIR BROKEN MAINS IN 15 MINUTES!

One-man job . . . any pressure . . . terrific economy! Not only splices main, but *sealed gasket* absorbs future traffic jar or frost heaving! Refer to page 8 of our new Catalog GW. M. B. Skinner Co., South Bend 21, Indiana.

SIZES 2" TO 24" INC

SKINNER-SEAL SPLIT COUPLING CLAMP

Coming Events

IN THE GAS DISTRIBUTION INDUSTRY

November

10-12 API convention, Palmer House Hotel, Chicago, Illinois.
10-14 National Electrical Manufacturers Association, annual meeting, Traymore Hotel, Atlantic City, New Jersey.
17-19 National Fire Protection Association fall conference, Pittsburgh, Pennsylvania.
18-20 American Standards Association, Hotel Roosevelt, New York, New York.
19-21 Mid-West Gas Association, gas meter and service school and conference, Iowa State College, Ames, Iowa.
20 NEGA manufacturer - distributor division, Bancroft Hotel, Worcester, Massachusetts.
30-December 5 American Society of Mechanical Engineers, annual meeting, Statler Hotel, New York, New York.

December

1- 3 American Society of Refrigerating Engineers, semi-annual meeting, Hotel Roosevelt, New Orleans, Louisiana.
1- 4 National Warm Air Heating and Air Conditioning Association, annual convention, Cleveland, Ohio.
7- 9 Institute of Appliance Manufacturers, year-end meeting, Statler Hilton Hotel, Dallas, Texas.
10-11 National Construction Industry Conference, sponsored by Armour Research Foundation, Hotel Sherman, Chicago, Illinois.
22 NEGA, operating division, Hotel Statler, Boston, Massachusetts.
26-30 American Society of Heating and Air Conditioning Engineers annual meeting and exposition, Philadelphia, Pennsylvania.
29 NEGA, accounting division, Hotel Statler, Boston, Massachusetts.
30 Rocky Mountain Gas Association, annual meeting, Denver, Colorado.

January 1959

13-14 A.G.A.-PCGA public relations conference, Hotel Westward Ho, Phoenix, Arizona.
16 Oklahoma Utilities Association, accounting section, Biltmore Hotel, Oklahoma City, Oklahoma.
18-22 National Association of Home Builders, convention and exposition, Chicago, Illinois.
19-20 Industrial Heating Equipment Association, Hotel Cleveland, Cleveland, Ohio.
22 NEGA, operating division, Statler Hilton, Boston, Massachusetts.
26-30 American Society of Heating & Air Conditioning Engineers, annual meeting and exposition, Philadelphia, Pennsylvania.
29 NEGA, accounting division, Statler Hilton, Boston, Massachusetts.
29-31 A.G.A. Home Service Workshop, Jung Hotel, New Orleans, Louisiana.

February

18 NEGA, street department supervisors' group of operating division, Bancroft Hotel, Worcester, Massachusetts.

March

5- 6 SGA distribution management round table conference, Jung Hotel, New Orleans, Louisiana.

Get the facts and you'll get Lone Star line pipe

Gathering, distribution and transmission lines.. using Lone Star API line pipe.. give trouble-free service month after month and year after year.

Every length of Lone Star pipe is subjected to the API hydrostatic tests in length of time and degree of pressure. Yes, Lone Star is rigidly quality-controlled from mining of ore to finished pipe. Lone Star fully normalized casing, tubing and line pipe are made strictly to Joe Roughneck's standards.

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Neighbor, wherever you are, specify Lone Star and we both get a good deal.

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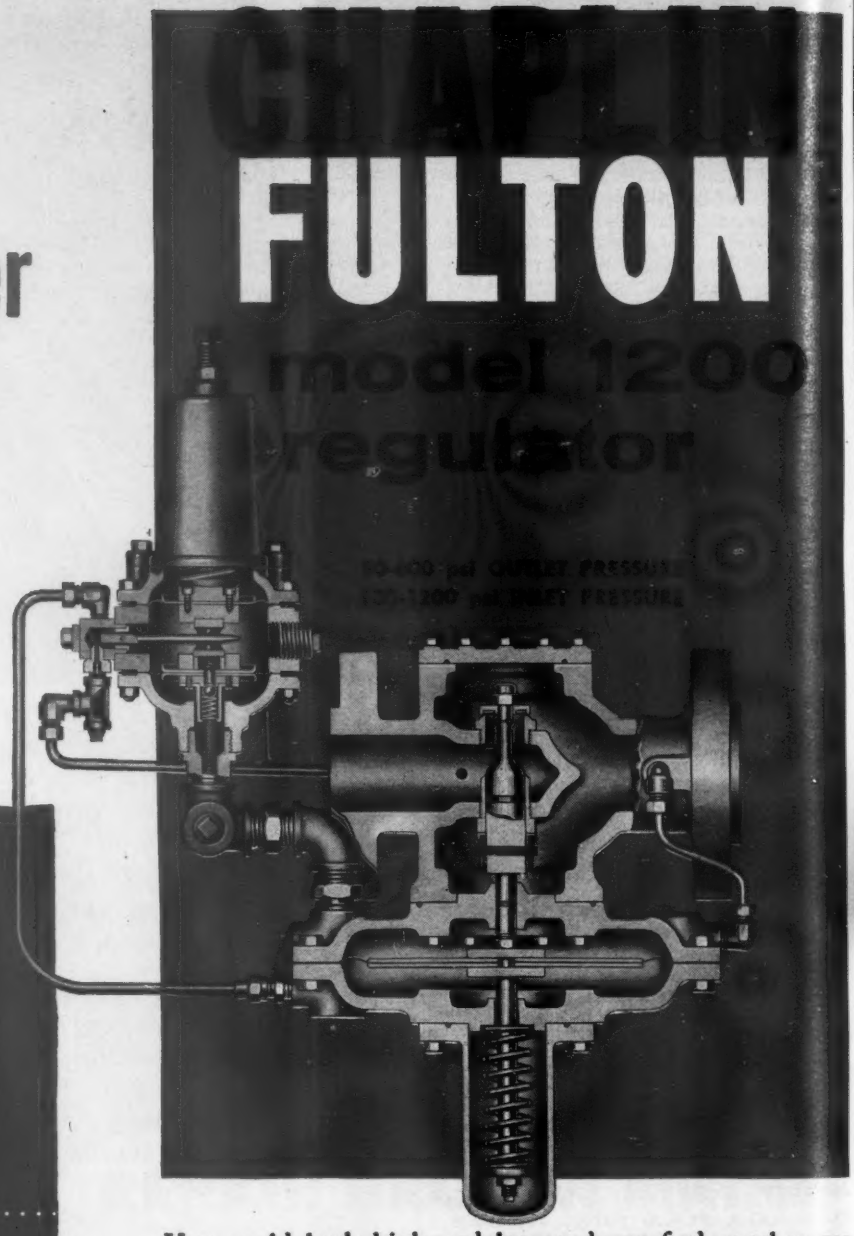
A good number to remember

gives widest range control... no other like it!



- Ready for installation . . . no field connections needed
- All-steel construction . . . stainless steel trim
- Pilot loaded for accurate control
- Large capacities, 529,000 cfh at 800 psi inlet

Single seat valve with molded in place disc—balanced against inlet pressure thrust.

Size—2" flanged Series 60 (Series 30 Optional)

Working Pressure—1200 psi (Series 30-600 psi)

Outlet Pressure

With Type 51 Pilot	50-150 psi
Type 52 Pilot	50-300 psi
Type 53 Pilot	50-600 psi

Face to Face

Series 60	10½"
Series 30	9¾"

for complete information write for bulletin 1200

You could look high and low and not find another gas regulator like this Model 1200 in the business. It's compact and self-contained, designed for rugged high-pressure service with Chaplin-Fulton accuracy. No field connections needed—a 2" integral unit ready for installation. Actually, this Model 1200 is an all-steel version of our widely accepted Model 1100 . . . now ready to help solve your high-pressure problems.

ACCURATE CF MFG CO DEPENDABLE

WSW 6834

Chaplin-Fulton

MANUFACTURING COMPANY

NOW ...a NEW MUELLER®

DOUBLE PRESSURE CHAMBER TAPPING MACHINE...

the B-100

MAKES FASTER TAPS!

ASSURES PRESSURE TIGHT CONNECTIONS!

PROVIDES EASY, TROUBLE-FREE OPERATION!

use it by hand or with power...

FORM NO. W-8912

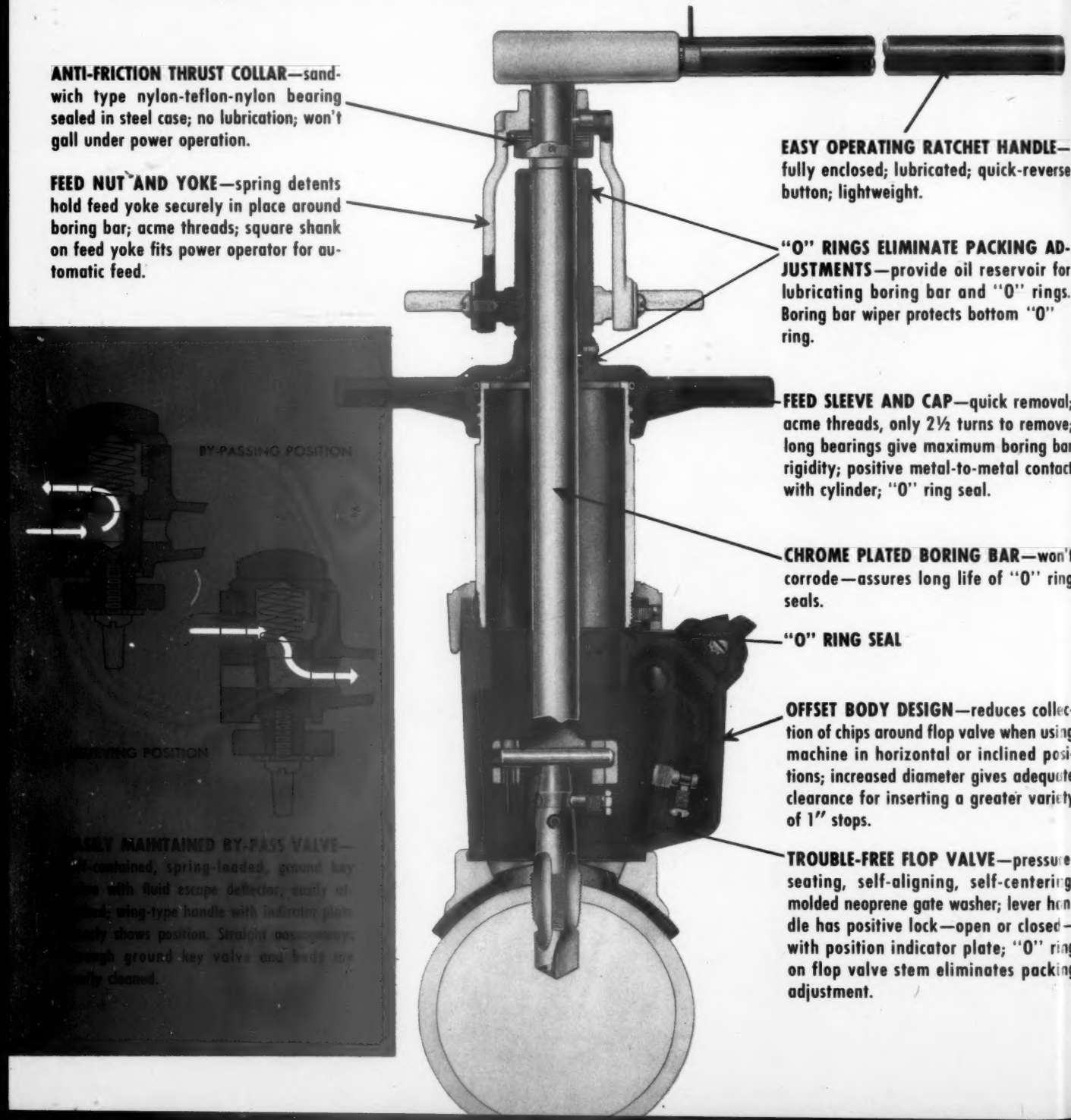
PRINTED IN U.S.A.

Features and Benefits

Fast taps, pressure tight connections and easy trouble-free operation provide an operating efficiency so necessary to meet today's demands. The new B-100 Drilling, Tapping and Inserting Machine gives these results IMMEDIATELY and CONSISTENTLY.

The machine incorporates the same basic double pressure chamber, single boring bar design principle which, through 86 years of field experience, research and testing, has proved to be the most efficient in operation. Its design permits the operator to handle the machine in lightweight sections. The tapping and inserting operations are performed separately. Tool or stop may be safely removed from the machine at any time during the operation for inspection or replacement, if necessary.

The "B-100" is *all new* from the saddle up, and has plus features we know you have wanted. Look over these features—see how they all combine to contribute to faster taps, pressure tight connections and easy, trouble-free operations.



ANTI-FRICTION THRUST COLLAR—sandwich type nylon-teflon-nylon bearing sealed in steel case; no lubrication; won't gall under power operation.

FEED NUT AND YOKE—spring detents hold feed yoke securely in place around boring bar; acme threads; square shank on feed yoke fits power operator for automatic feed.

EASY OPERATING RATCHET HANDLE—fully enclosed; lubricated; quick-reverse button; lightweight.

"O" RINGS ELIMINATE PACKING ADJUSTMENTS—provide oil reservoir for lubricating boring bar and "O" rings. Boring bar wiper protects bottom "O" ring.

FEED SLEEVE AND CAP—quick removal; acme threads, only 2½ turns to remove; long bearings give maximum boring bar rigidity; positive metal-to-metal contact with cylinder; "O" ring seal.

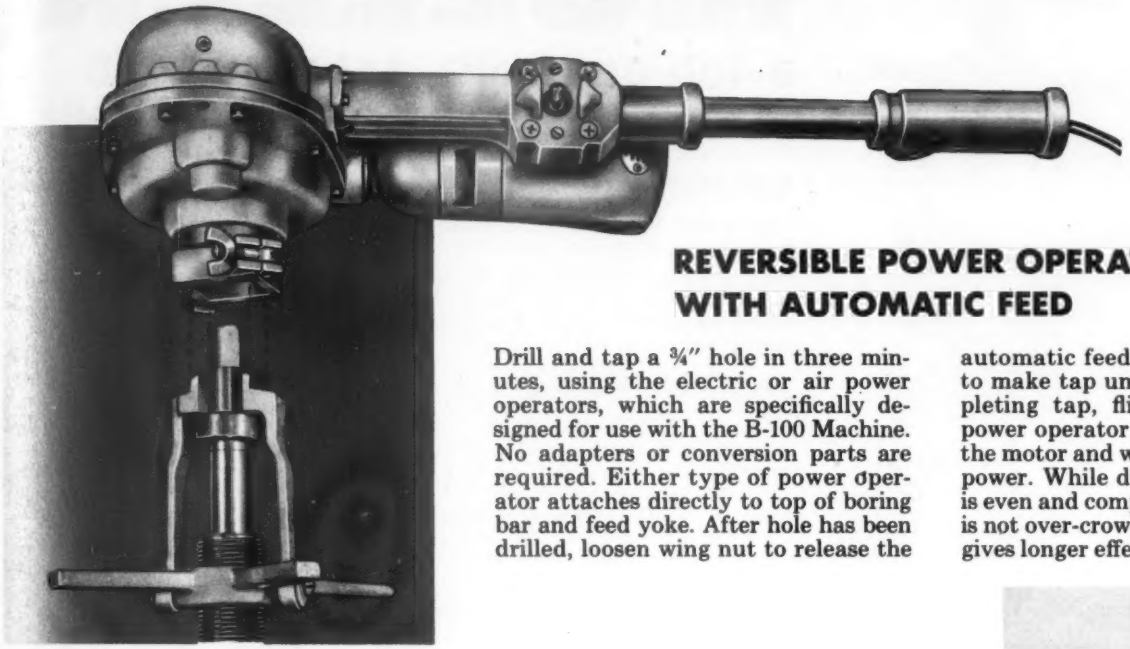
CHROME PLATED BORING BAR—won't corrode—assures long life of "O" ring seals.

"O" RING SEAL

OFFSET BODY DESIGN—reduces collection of chips around flop valve when using machine in horizontal or inclined positions; increased diameter gives adequate clearance for inserting a greater variety of 1" stops.

TROUBLE-FREE FLOP VALVE—pressure-seating, self-aligning, self-centering; molded neoprene gate washer; lever handle has positive lock—open or closed—with position indicator plate; "O" ring on flop valve stem eliminates packing adjustment.

owners and operators will like...



REVERSIBLE POWER OPERATOR WITH AUTOMATIC FEED

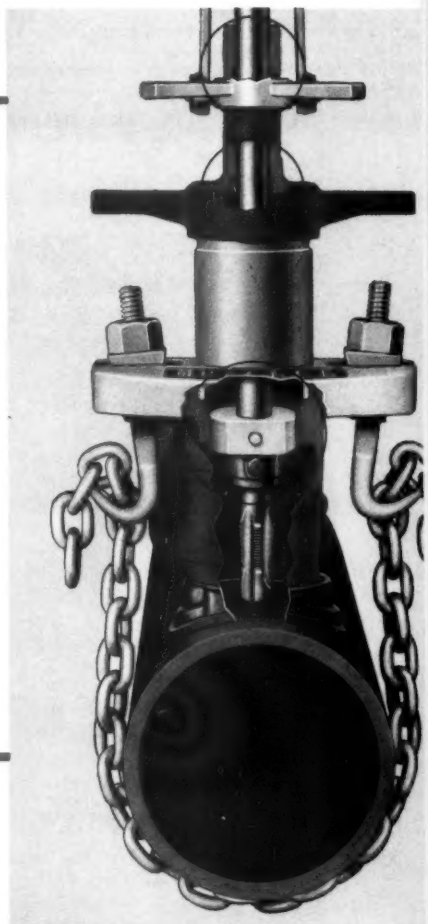
Drill and tap a ¾" hole in three minutes, using the electric or air power operators, which are specifically designed for use with the B-100 Machine. No adapters or conversion parts are required. Either type of power operator attaches directly to top of boring bar and feed yoke. After hole has been drilled, loosen wing nut to release the automatic feed driver, then continue to make tap under power. After completing tap, flip the switch on the power operator to reverse direction of the motor and withdraw the tool under power. While drilling, boring bar feed is even and completely automatic—tool is not over-crowded; does not overheat; gives longer effective tool life.

ASSURED RIGIDITY ON THE MAIN

Pressure-tight connections start with complete machine rigidity on the main. Aluminum alloy chain yoke has high strength—lightweight. Chain hook washers are widely spread and deeply recessed in yoke to prevent slipping off on large diameter pipe. Chain hook cannot rotate—chain cannot twist during tightening. Square shank on chain hook fits inside square hole in chain washer. Square shank on chain washer prevents turning in yoke. Acme threads on chain hooks give long life. Chain hooks, chain hook washers and chain hook nuts are cadmium plated to resist corrosion.

IN THE BORING BAR

Perfect alignment of the boring bar is assured by three boring bar bearings; two, widely spaced in the feed sleeve, and the third at the extreme bottom end of the boring bar. The lower bearing is of molded nylon and closely bears against a machined surface in the body when the drill first contacts the main and also when the stop is being inserted. Curvature of the pipe cannot deflect the drill—tools are relieved of unnecessary stresses and give longer effective life. These three widely spaced boring bar bearings assure perfect centering of tool and stop for accurate threading and a pressure-tight connection.



NEW TOOL RETAINER WITH INDEPENDENT DRIVE

Drive pins in shank of new combined drill and tap or E-Z Release Screw Plug slip into notches in the boring bar socket. All driving force is exerted against these drive pins, preventing damage to the surface of the tool shank. Tool retaining screw in replaceable bronze sleeve bears against the upper part of a circular groove around tool shank—holds tool tight in boring bar socket. This new holding and driving arrangement assures perfect tool-boring bar alignment and maximum rigidity, for long tool life.

No problem to remove tools in the "B-100". Just loosen the tool retaining screw, tap the knockout pin in the tool holder and the tool slides out in your hand.

MUELLER®

B-100 DRILLING, TAPPING AND INSERTING MACHINE

CAPACITY AND USE

The B-100 Machine will drill and tap the main and insert the following items under pressure: corporation stops and gas main stops ½" through 1"; machine inserted valve tees ¾" and ¾"x1"; and pipe plugs ½" through 2½".

Combined drills and taps and screw plugs are not interchangeable between the B and B-100 Machine. Saddles are interchangeable with the B Machine.

WORKING PRESSURE

90 p.s.i. without power clevis.
250 p.s.i. with power clevis.

B-100 MACHINE AND EQUIPMENT FURNISHED

- Ratchet handle
- Small saddle gasket
- Large saddle gasket
- Chain hooks and nuts
- Chain washers
- Round link chain
- Chain hook nut and tool retaining screw wrench
- Body cleaning chisel
- Lubricating oil
- Cutting grease

Shipped in strong wooden chest. Total shipping weight 97 pounds.

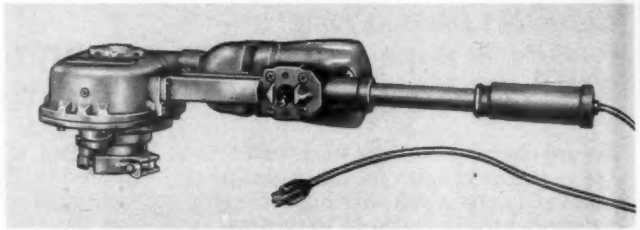
Handling weight during operation: upper section 19 pounds; lower section 23 pounds.

EQUIPMENT TO BE SELECTED

- Combined drills and taps
- Saddles
- Screw plugs
- Extracting tools

OPTIONAL POWER OPERATORS

Electric or air power operators are offered as optional equipment for use with the B-100 Drilling and Tapping Machine. Either unit is suitable for 1" taps through any kind of pipe. Drive spindle turns at 35 r.p.m.—motors are reversible.



H-603 ELECTRIC POWER OPERATOR
110-120 volt A.C. or D.C.

H-604 AIR POWER OPERATOR
90 p.s.i. pressure (full load)

OPTIONAL EQUIPMENT FOR SPECIAL USES

- Power clevis
- Chain spreader
- Corporation stop wrench
- Round link extension chains
- Long Ratchet Handle Bar (used for drilling and tapping operations on cuts over 1" in size).

Since 1857 SERVING the Water and Gas Industries

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Factories at: Decatur, Chattanooga, Los Angeles;
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Men At Work

IN THE GAS DISTRIBUTION INDUSTRY

● **Thomas F. Bartley** has been appointed field sales manager of RCA Whirlpool home appliances to assist general sales manager **John Crouse** in coordinating and supervising activities of regional and district managers and providing marketing help and counsel to RCA's 78 wholesale distributors. Bartley succeeds **James V. Baxter,** who resigned recently. Former gas range product manager **Gerald L. Hartman,** succeeds Bartley as range sales manager in charge of all gas and electric range sales.

● **A. W. Foster** of Clarksburg, West Virginia, has been appointed assistant system gas dispatcher of Consolidated Natural Gas Company. He was formerly superintendent—gas control of Hope Natural Gas Company. In his new position, he has been transferred to New York State Natural Gas Corporation, but will continue to have headquarters with Hope in Clarksburg. Both Hope and New York State Natural are subsidiaries of Consolidated.

A. W. Foster

C. R. DeHaven

● Philadelphia Gas Works has appointed **Charles R. DeHaven** manager of public relations. He was formerly director of public relations of the Pennsylvania Association of Milk Dealers in Harrisburg, Pennsylvania.

● **James A. Hickey,** former safety supervisor of Atlanta Gas Light Company, has been named safety coordinator for Southern Union Gas Company.

● **Homer Laughlin** has resigned his post as advertising manager of Southern Counties Gas Company for reasons of health. He had been advertising manager since 1952.

● **Robert P. Thomsen** has been appointed sales manager of Dollinger Corporation succeeding **Lewis I. Dollinger Jr.,** who recently was elected president. Previously Thomsen had been advertising manager.

● **Howard Bean,** formerly associated with the National Bureau of Standards, is now affiliated with Daniel Orifice Fitting Company as flow measurement consultant. Bean, who served as physicist, chief of gas measurement instruments section, and chief of capacity, density, and fluid meters section, was with the Bureau for over 40 years.

● **Marvin F. Hall** has been appointed consulting gas engineer in charge of the gas engineering activities for Ebasco Services, Inc.

● **Vernon S. Walker** has been appointed steel valve sales representative for Kerotest Manufacturing Company.

● **L. Rene Gaiennie** has been elected vice president of industrial and public relations of ACF Industries, Inc. succeeding **Albert L. Kress,** who remains a staff vice president.

● **Hilding V. Beck** has been named vice president and chief engineer of American Meter Company, Inc. He has been chief engineer since 1954 and previously served in the research and engineering departments.

● **Jack Shnable** has been promoted to West Coast general sales manager of Controls Company of America and will be located at the company plant in El Segundo, California.

● **J. P. Gasser** has been appointed executive vice president of Dresser Industries, Inc. He was formerly associated with Seaboard Oil Company as executive vice president and member of the executive committee. As one of three Dresser executive vice presidents, Gasser will direct activities of Lane-Wells, Ideco, Inc., Magnet Cove Barium, Security Engineering, Well Surveys, Dresser Dynamics, Southwestern Industrial Electronics, Hermetic Seal Transformer Company, and Dresser's Turbodrill Division.

● **Dale DeLong** and **R. F. Hughes** have been appointed sales engineers for Grove Valve and Regulator Company. DeLong will be assigned to the New Orleans area; and Hughes will be headquartered in Tulsa.

● **C. C. Herrmann,** vice president and treasurer of the Wisconsin Power and Light Company, has been promoted from vice chairman to chairman of the accounting section of Wisconsin Utilities Association. He succeeds **Gerhardt A. Schmidt,** assistant secretary, Wisconsin Michigan Power Company. **John C. Carroll,** secretary and treasurer, Mississippi Valley Public Service Company, has been named vice-chairman, succeeding Herrmann.

C. C. Herrmann

V. C. Seiter

● **V. C. Seiter** of Citizens Gas & Coke Utility has been elected president of the Indiana Gas Association. Other officers include: **C. D. Rees** of Northern Indiana Public Service Company, to vice president, and **R. A. Steele** of Citizens Gas & Coke Utility, to secretary-treasurer.

● Association of **Frank P. Saponaro** with H. Zinder & Associates, Inc. utility consultants, has been announced by **H. Zinder,** president. Formerly Saponaro served as vice president of Algonquin Transmission Company in charge of rates, sales promotion, regulatory and gas supply problems.

1897 1958

PIPE STOPPERS OF ALL KINDS

•

SAFETY GAS MAIN STOPPER CO. INC.

523 Atlantic Avenue

Brooklyn 17, N. Y.

Cable Address: GASTOPPER, N. Y.

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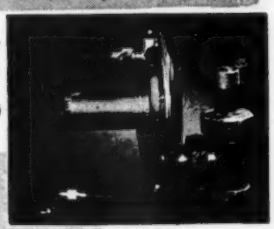
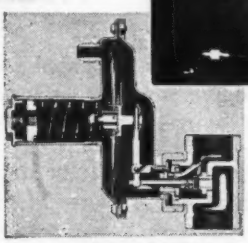
GAS SERVICE REGULATORS FOR CONVERSION OR PRESSURE ELEVATION

A REGUATOR, BREATHER VENT AND CATHODIC INSULATOR IN ONE PACKAGED UNIT





U. S. Patent No. 2,577,480. Other Patents Pending.

TYPE 51-R FOR EVERY INSTALLATION

EXCLUSIVE FEATURES NOT FOUND ELSEWHERE

Exceptionally high relieving capacity obtained by new type internal relief valve. Remarkable by-pass check valve prevents over-shooting of low pressure and damage to meter.

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CONTROLS CORPORATION

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Walnut Hill Sta. — Dallas, Texas

Superior manufactures all sizes of meters from 80 to 7500 cfh.

Income with a future...

90,000,000 gas-fired appliances in use today...
125,000,000 more ten years from now...
33,000,000 to go into new homes yet to be built.

That's future income for the gas industry... income that the sustained accuracy of Superior meters will help safeguard.

Long-term accuracy is the "credo" of Superior's career-engineers... of their long-service meter craftsmen who have followed through with modern tooling and precision assembly. Step-by-step testing... taking advantage of the latest developments in quality control techniques... eliminates binds and friction... stops trouble before it starts.

You buy wisely when you specify the enduring accuracy of Superior meters for your utility. The meters you buy today protect your profits tomorrow.

SUPERIOR METER COMPANY, INC.
19 West 50th Street, New York 20, N. Y.
A SUBSIDIARY OF NEPTUNE METER COMPANY

neptune

● **Hevi-Duty Electric Company** has announced the following additions to its furnace staff subsequent to the recent acquisition of the industrial furnace division of Eclipse Fuel Engineering. **Richard Hayden,** former head of the division will have charge of gas furnace sales at Hevi-Duty. **Norman Acker,** superintendent of furnace manufacturing shop at Eclipse will perform liaison work between engineering sales and production departments at Hevi-Duty. **William Swanson** will continue to work with automatic heat treating units as a sales and service engineer.

● Gas Purifying Materials Company, Inc. has announced that **Bernard D. Klein,** who has resigned as president, has been named chairman of the board; **Bertram L. Klein** has been elected president and treasurer, and **Theodore P. Keller** has been elected executive vice president. Other officers elected included: **Stanley S. Weiser** as vice president and **Miles M. Klein** as vice president and secretary.

● **Lyle W. Kahler,** prominent industrial service and sales executive, has been appointed product and service training manager of Massey-Ferguson Industrial Division.

● **Avery C. Adams,** president of Jones & Laughlin Steel Corporation, has been elected to the board of directors of Equitable Gas Company.

● **W. D. Alexander** has been appointed treasurer of Inland Natural Gas Company, Ltd.

● **Fred D. Bradley,** assistant treasurer of Southern Union Gas Company, has been elected vice president of the National Association of Purchasing Agents at its 43rd annual international convention.

● **A. G. "Tony" Prasil** of Oshkosh, Wisconsin, has been named to the home office engineering staff of Southern Union Gas Company.

● **Robert M. Olson, Jr.** has been appointed assistant counsel of Southern Counties Gas Company succeeding **Joseph R. Rensch,** now assistant vice president and special counsel of Pacific Lighting Gas Supply Co.

● **Robert B. Smith,** former coordinator of research for Columbia Gas System Service Corporation, has been named assistant director of research for American Gas Association. Through cooperation of Columbia Gas, Smith has been on temporary assignment to AGA for the past year.

● Buflovak Equipment Division, Blaw-Knox Company, has announced the appointment of **Clarence E. Becker** as manager of manufacturing.

● **J. M. Cook** has been appointed vice president in charge of marketing and **P. S. Jones** has been appointed senior vice president of Cutler-Hammer, Inc. Jones, former vice president in charge of sales, plans to retire at the end of the year after 43 years of service with the firm, and Cook's appointment is being made at this time in anticipation of Jones' retirement.

● **Gerry Powell** has been appointed sales manager of White-Rodgers Company and will be responsible for the company's field sales force.

● **Jack Fatherree,** accountant for Lone Star Gas' Fort Worth division of distribution, has been promoted to assistant treasurer of the division succeeding **Clark K. Fletcher** who retired in August.

● **W. L. Williams,** former assistant treasurer and assistant secretary, has been named treasurer and assistant secretary of Mountain Fuel Supply, **B. Z. Kastler Jr.,** company attorney, has been named secretary and assistant treasurer. **L. Clyde Olpin,** former secretary and treasurer of the company, retired in September. As a result of Kastler's promotion, additional responsibilities of the attorney's office have been assigned to **John Crawford Jr.,** assistant attorney. Kastler, however, will continue to direct legal affairs of the company.

● **Richard C. Rose,** assistant superintendent of motor transport has been named superintendent of motor transport for Ohio Fuel Gas succeeding **J. L. Brooks,** who retired recently.

● **Clyde C. Phillips,** vice president and director of Ohio Fuel Gas retired October 1 closing a 49-year career with the firm.

● **Charles A. Naylor** has been named training director of New York State Natural Gas new training section, employee relations department. He was formerly manager of personnel development at Koppers Company.

● **Gerard C. Boeve** has been promoted to sales manager of the East Coast Division of Peoples Gas System. He was formerly commercial and industrial sales supervisor for the division.

● Two recent personnel changes at Peoples Natural Gas of Pittsburgh were: **Samuel G. Pew** promoted to superintendent of Forbes Shop, a Wilkinsburg unit of the company; **Robert C. Bell** appointed to the newly-created position of market analyst.

● **Bruce B. Harris** has been appointed news and publications manager of Southern Counties Gas succeeding Steve Baer, who was recently named public relations director of Pacific Lighting Gas Supply Company. **Frank Roe,** formerly of customers' department, assumes the post of public relations representative in charge of employee activities succeeding Harris.

● **Alan R. Bailey** has been elected executive vice president of Southern Counties Gas. He has served as senior vice president of the utility since 1956 and is a member of the board of directors.

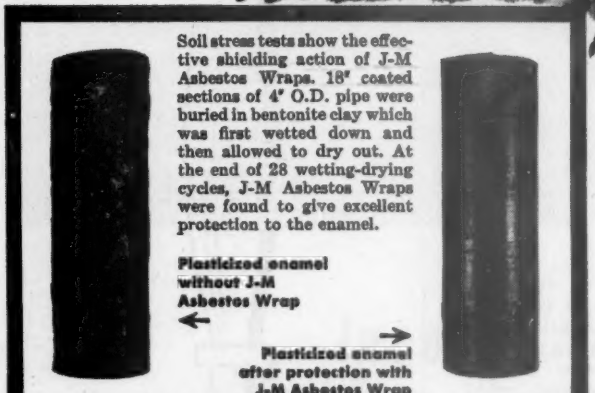
● **Harlan A. White** has been appointed assistant works manager of Mueller Company.

● **George West,** former New York plant coordinator of Vulcan Rubber Products Division of Reeves Brothers, has been transferred to Buena Vista, Virginia, plant to become technical manager of development of the division.

LEAKAGE REPAIRS
by
SOUTHERN CROSS FORESTERS
Atlanta 6, Ga. MElrose 4-4227

Stop damage to enamels from earth loads and soil movement...

Johns-Manville Asbestos Wraps are available in 3 types for field application or mill wrapping.



Soil stress tests show the effective shielding action of J-M Asbestos Wraps. 18" coated sections of 4" O.D. pipe were buried in bentonite clay which was first wetted down and then allowed to dry out. At the end of 28 wetting-drying cycles, J-M Asbestos Wraps were found to give excellent protection to the enamel.

Plasticized enamel without J-M Asbestos Wrap ←

→ **Plasticized enamel after protection with J-M Asbestos Wrap**

Get lasting protection with tough, strong J-M Asbestos Wraps

Extensive research and field tests conducted by a leading firm of consulting engineers have demonstrated the effects of soil movement and earth loads on pipeline enamels. They show how the forces of the soil tend to distort and induce thin spots that weaken the protective coating . . . permit corrosion of the pipeline.

The same research and field tests also demonstrated that J-M Asbestos Wraps provide the strong protection that strong coatings need and deserve. "Asbestos Wraps offer the most effective single protection against damage —prolong the working life of pipeline enamels." Here's why . . .

Asbestos is an ageless mineral. Fibers of asbestos are strong and tough . . . cannot rot or decay. As used in J-M Wraps, the fibers are felted, then impregnated with a coal tar or asphalt saturant to form literally a flexible covering of stone. These "stone-like" qualities form a durable shield—protect pipeline enamels from earth loads and soil movement which weaken coatings and permit pipe corrosion to set in.

Pipeline engineers are invited to write for their own copy of PP-34A, a *3-Point Study of Pipeline Coatings and Wrappers*, at no cost or obligation.

Johns-Manville, Box 14, New York 16, N. Y.
In Canada, Port Credit, Ontario

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JOHNS-MANVILLE JM PRODUCTS

You, too, can have . . .

A Realistic Distribution Maintenance Program

. . . you'll need: complete data on leakage, soil resistivity, pipe condition and age, details on repairs to system; from this, you can develop a three-phase program to solve your maintenance problems

J. H. Glamser,
Superintendent of Distribution
Oklahoma Natural Gas Company,
Tulsa, Oklahoma

ARE YOU JUST SITTING ON YOUR MAINTENANCE PROBLEMS? You may well be and not know it . . . unless you can answer the following questions:

1. *Do you know the age of your distribution lines?*
2. **How many leaks are in each block?**
3. How many repairs have been made on each block of main and what type of repair was made?
4. *In what environment are your mains installed?*
5. **Are there any hot manholes adjacent to your system?**
6. Do any basements of your business district show presence of gas?
7. *How much leakage do you have?*
8. **How much of your system was installed as coated pipe and is not cathodically protected?**
9. Do you have records which readily furnish the answers to these eight questions?

Approximately five years ago, we asked ourselves these same questions. No answers were available except for leakage, which we knew was on the increase. We found that very little maintenance had been done in the 1930's due to economic conditions, and very little during the war years due to lack of manpower and supplies.

A further study of these questions led to the development of a three-phase program for solving our maintenance problems. These three phases are:

1. **Exploratory,**
2. **Remedial,**
3. **Preventative.**

The overall objectives of this program are to eliminate eminent or potential hazards; to reduce unaccounted-for gas; and to perpetuate our distribution systems.

First Phases "Find Out"

With this in mind, the initial or exploratory phase of the program was developed to eliminate hazards, to reduce unaccounted-for gas, and to develop a historical background that would permit proper planning to proceed into the remedial and preventative phases of the program.

These objectives are accomplished by manhole surveys, leakage surveys, and follow-up repair work. This initial phase consisted of barhole and explosimeter tests over all distribution lines at 50-ft (or closer) intervals, increased frequencies of manhole surveys, and the initiation of basement surveys in the downtown areas.

Leaks are classified and coded on plant maps; and work orders are prepared and given to follow-up crews, who repair the hazardous and major leaks. These repairs are also classified and coded on repair maps. It must be recognized that these activities do not permanently correct any excessive leakage — they do, however, provide temporary relief.

This survey, together with repairs and establishment of historical records, is a necessary first step toward developing a program to economically control leakage and corrosion problems.

In the beginning, we felt that the historial background of leakage and repairs would be sufficient to allow us to plan and develop our remedial or secondary phase of our program inasmuch as leaks and repairs should indicate where permanent repairs by rebuilding should be made. Three additional factors found to be necessary — and not as yet developed — were an age map, soil resistance map, and a record of coated and wrapped pipe.

A preliminary "age" study of our distribution systems, revealed pipe longevity conditions as follows:

Mains 40 to 50 Years Old: **650 actual miles,**
Mains 20 to 40 Years Old: **1,940 actual miles,**
Mains 0 to 20 Years Old: **1,500 actual miles.**

But where, exactly, was this pipe of various ages? To obtain this information, it was necessary to examine old records and reports. At the same time this information was being developed, these records and reports were also searched to reveal the amounts and locations of coated and wrapped pipe in our systems laid in the 1920's and early 1930's that had not been cathodically protected.

Once we had determined the age of our distribution mains and the quantities and locations of mains originally laid as coated and wrapped pipe, the next step was the development of a soil resistance map. This survey, it was found, could be carried on at the same time as the leakage survey and by the same crew by using a soil resistance rod. At this point, we had enough information to proceed into the remedial phase of our program.

Correlation of Data

Examples of how this information is correlated are shown in the accompanying figures. Fig. 1 shows a section of an age map detailing all pipe in one distribution system. Colors are used to indicate the ages of the mains (shown in shades of gray on Fig. 1). Fig. 2 shows the leaks found in one area of this distribution system. Fig. 3 shows repairs that were made. Fig. 4 shows the soil resistance survey superimposed on the leakage map. By examining the soil resistance map superimposed on the leakage map, it can easily be determined that soil resistance and leakage correlate.

With only the leakage and repair records, we can determine where pipe needs to be replaced, but we cannot tell how much pipe should be replaced on any one particular job. But with the aid of the age map and soil resistance map, the solution to the problem of determining what quantities of pipe are to be replaced in any one particular section becomes much clearer. Without this background of information, a considerable amount of money may be expended on replacements where minor maintenance otherwise would suffice.

Remedial Phase Takes Shape

Objective of the secondary or remedial phase of this program is to develop a long range maintenance replacement program. With the historical background developed in the initial phase, it is possible to correlate age of lines, soil environment, past maintenance, present leakage, and predict with reasonable accuracy the indicated type and extent of repairs on individual jobs.

In this manner, replacement programs may be projected many years

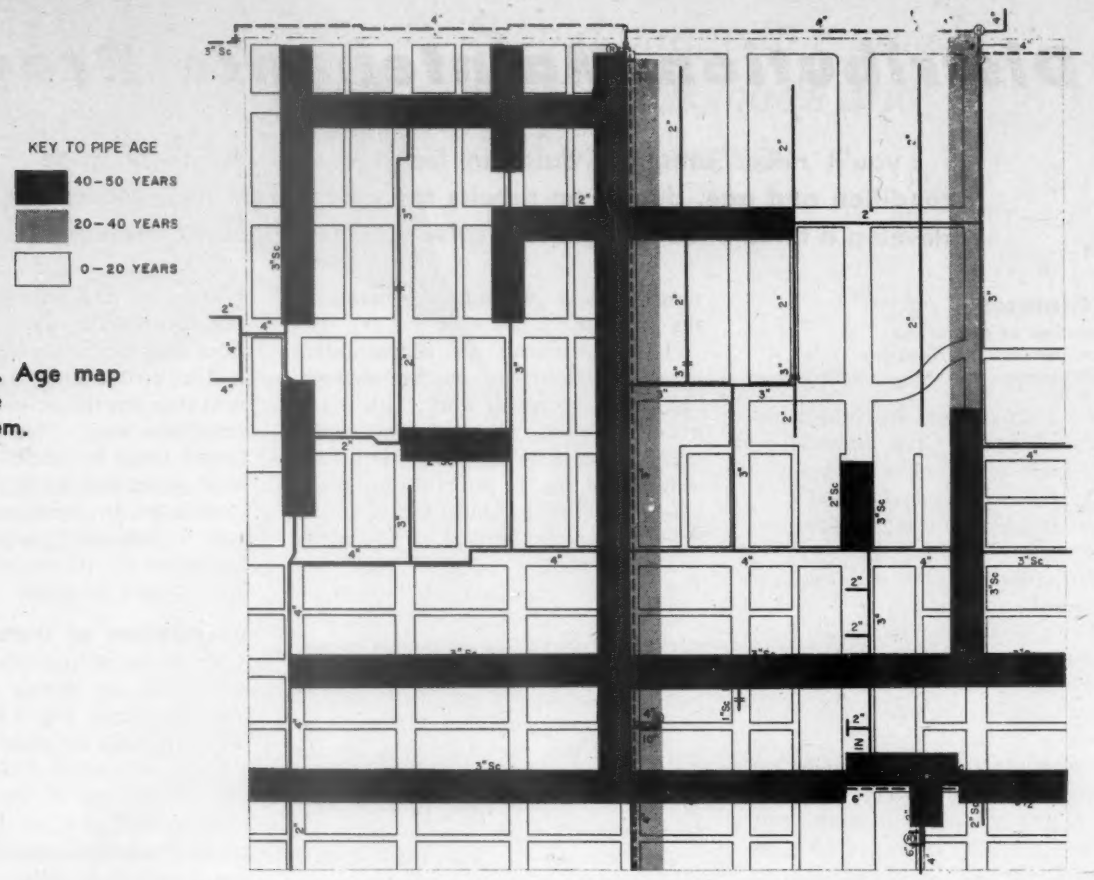


FIG. 1. Age map of pipe in system.

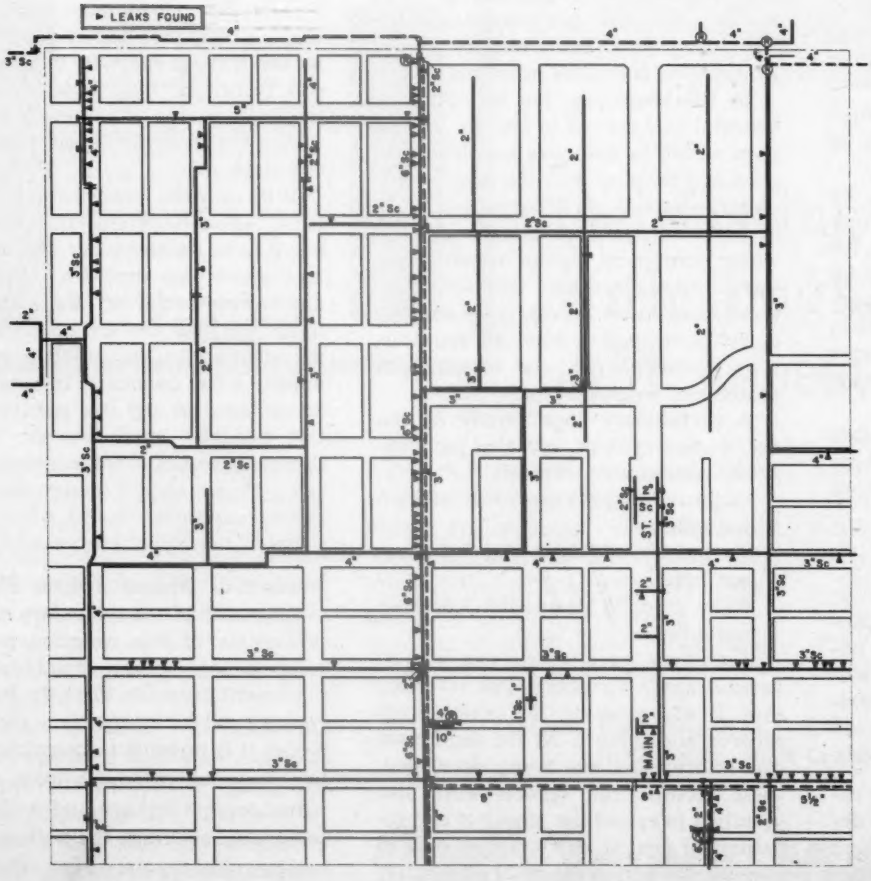


FIG. 2. Leak location map.

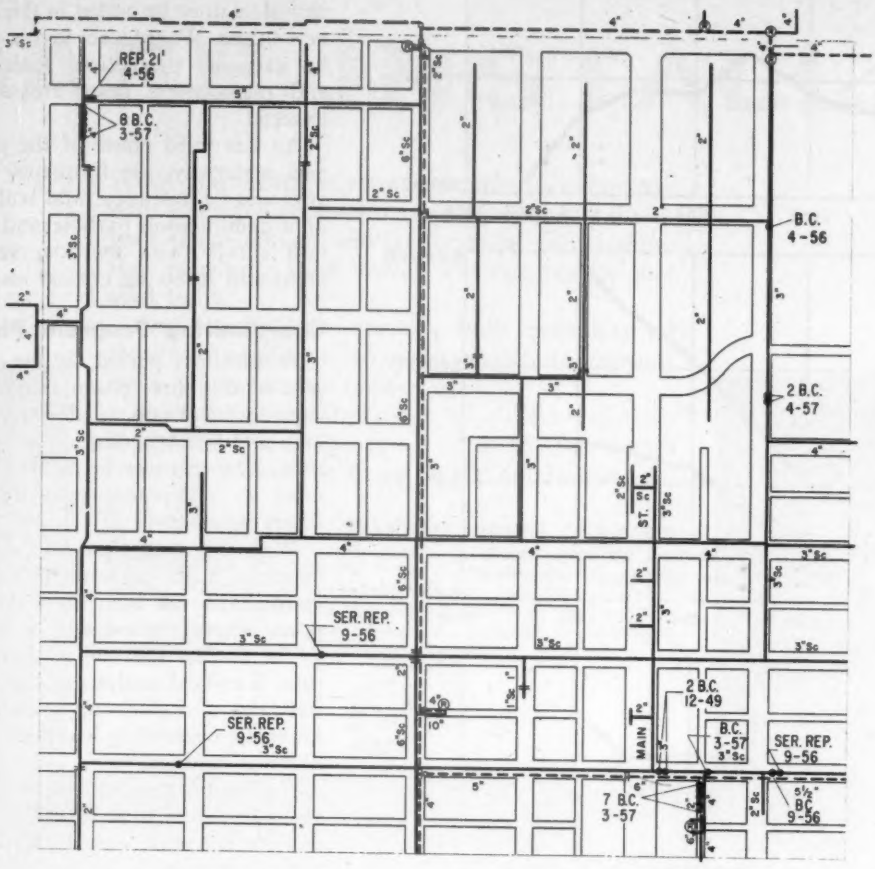


FIG. 3. Repairs map — type and location shown.

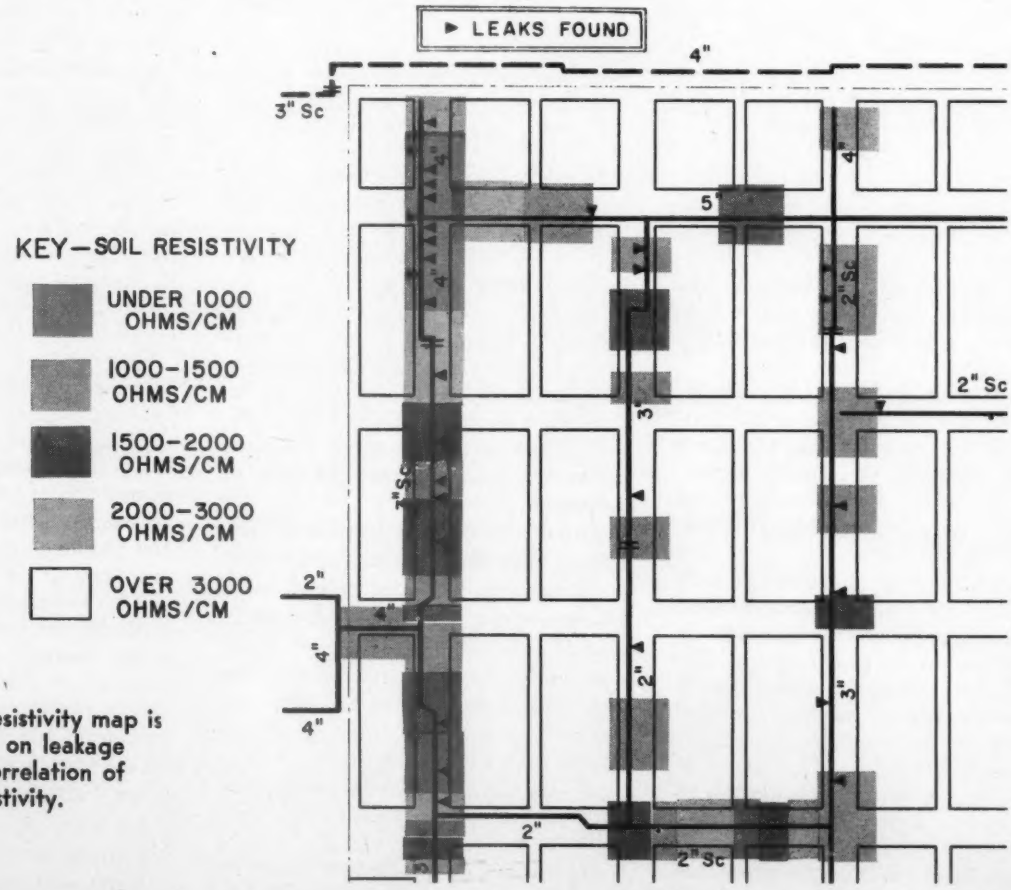


FIG. 4. Soil resistivity map is superimposed on leakage map. Note correlation of leaks and resistivity.

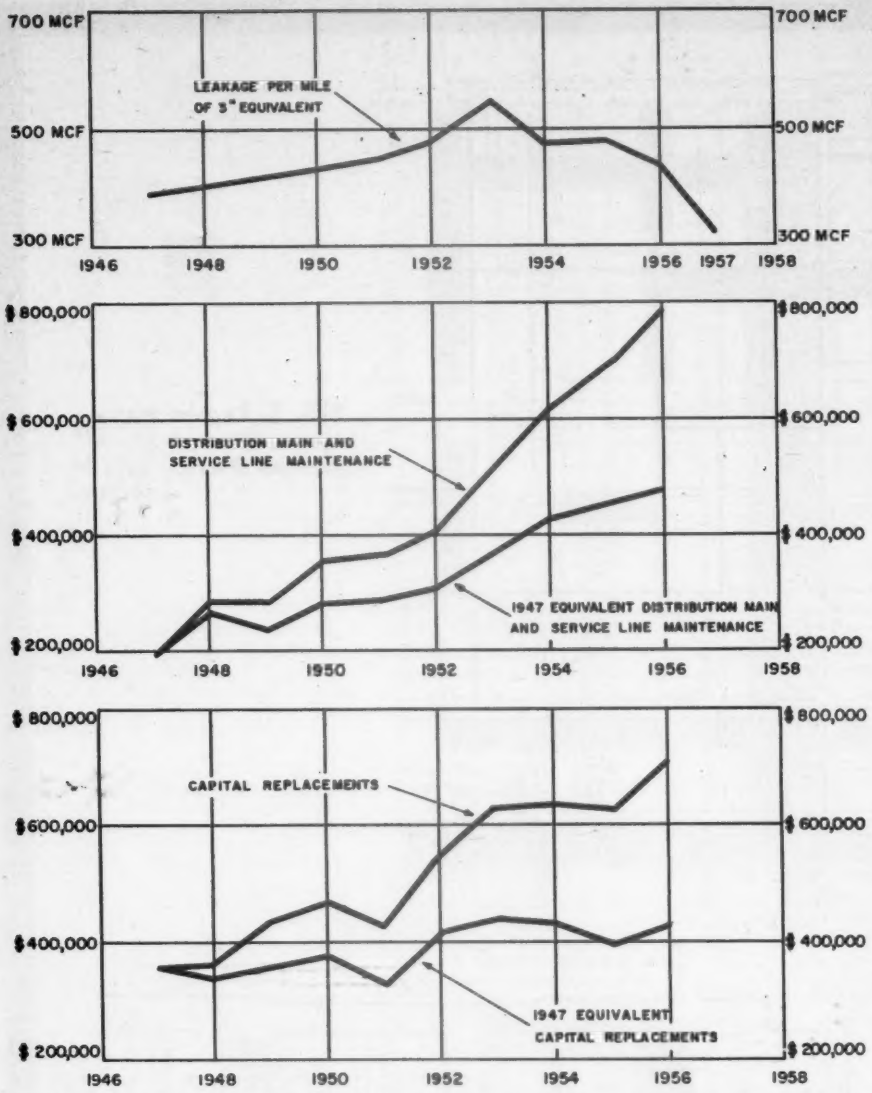


FIG. 5. Comparison of leakage, maintenance costs, and capital replacements is shown on charts above. Note leakage curve moved up until maintenance and capital replacement expenditures reached a certain level.

into the future. Costly maintenance expenditures may also be averted where replacement is indicated as the economical solution.

By analyzing the results and conditions from the initial phase of the program, we are in a position to screen out lines adaptable to cathodic protection, lines under protection, and old lines that require only light maintenance until replaced.

As a result of this analysis, maintenance activities may be concentrated on older lines where replacement is not indicated in the near future.

With this secondary phase underway, we are then in a position to eliminate barhole tests over lines where surface indications permit the vegetation survey method and to make physical inspections of lines in highly corrosive environments. Maintenance expenditures should decrease in this phase due to the planning that will permit a systematic approach to individual problems.

Preventative Phase

Third phase of this program is preventative. When this phase is reached, leakage control and cathodic protection groups are integrated into one corrosion control organization. Essentially, both groups are working on the same problem — *leakage* — the end result of corrosion.

This combined work consists of placing old lines under cathodic protection when feasible, hot spot protection in low resistance areas on bare unprotected lines, and doing only minor maintenance on old, unprotected lines until replacement can be justified.

In many instances, the life of old lines may be extended beyond previous expectancy by a small amount of maintenance and with the application of cathodic protection.

We cannot afford to underestimate the value of cathodic protection on both old and new lines. Taking a long range view of our operations, we can't escape the fact that where a few pounds of steel are being lost due to corrosion, new steel must be added in the form of new mains. Where steel loss is reduced by cathodic protection, maintenance and replacement costs are definitely lowered.

As this third phase of the program gets underway, the frequency of surveys can be extended, and will consist of a combination barhole and vegetation survey with the low resistance areas still receiving critical inspection.

Coordinating Program Phases

A transitory period, by the very nature of this three-phase program, will develop inasmuch as all three phases may and will be going on at the same time. This permits an orderly adjustment in equipment and personnel where necessary.

With the exceptions of hazards, it becomes more economical to forego maintenance on lines for leakage purposes where replacement is indicated as the correct solution in the near future. A critical analysis of the program indicates a realistic approach in permanently controlling leakage in an economical manner.

Budget projections can be based on factual records such as age, condition, soil environment, past experience, and present leakage. It is realized that the financial position of a company has some bearing on the time required for such a program, and the scope of activities no doubt will vary somewhat with company earnings.

As an indication of the cost of such a program, Fig. 5 shows amounts of money spent on maintenance and capital expenditures versus leakage. Note that the leakage curve was on the upswing until maintenance and replacement capital expenditures reached a certain level.

During the first phase of the program, maintenance expenditures should increase considerably faster than capital replacement expenditures, but a reversal in this trend should occur as the second phase of the program progresses. In the third phase, both capital and maintenance expenditures should decrease.

Also projected on these diagrams are expenditures based on a 1947 dollar value. Amount of expenditures necessary in both capital and maintenance to reduce leakage or to keep it at a constant level should necessarily be based on **work units** rather than on an inflationary dollar value.

All of these problems are big ones, but are no larger than those of the supervisor who is directly responsible for interpreting to management the nature of the problems and their solutions. ★

There's peace of mind in this

SAFE INSTALLATION

When you fabricate your large volume meter sets with Rockwell products, you can be sure of this—your measurement will be accurate, your regulation constant, your valves will turn easily and shut tight.

And there's extra security built right into all Rockwell products—to resist shock, to prevent leaks, to discourage tampering.

Next time, why don't you go all the way with Rockwell? Enjoy the peace of mind that comes from using only the finest, safest equipment.

ROCKWELL MANUFACTURING COMPANY

PITTSBURGH 8, PA. Atlanta Boston Charlotte Chicago Dallas Denver Houston Los Angeles Midland, Tex. New Orleans New York N. Kansas City Philadelphia Pittsburgh San Francisco Seattle Shreveport Tulsa In Canada: Rockwell Manufacturing Company of Canada, Ltd., Toronto, Ontario

ROCKWELL METERS, REGULATORS
ROCKWELL-Nordstrom VALVES

WHEN you think of "service" in relation to equipment, two meanings for the word come to mind. The first relates to how well the equipment performs. The second, how well the supplier handles the details of getting equipment, parts or information into your hands.

Rockwell has built its business by

SERVICE

...*that helps customers is our primary aim*

giving a superior degree of service of both types. In Rockwell products we have combined the best talents of design, engineering and manufacture to merit your long time satisfaction. To better serve you with the equipment you need, we have established a coast to coast network of plants, warehouses and sales offices, interconnected by the latest type of communication and order handling systems.

This means you can contact any Rockwell office or Rockwell salesman for prompt shipment of products or parts, often from warehouse stocks.

We at Rockwell are proud of a fine record of service . . . and a growing list of satisfied customers. Manufacturing only top quality measurement and control equipment is our first interest . . . but conducting our business to please you, our customers, is the primary aim. Rockwell Manufacturing Company, Pittsburgh 8, Pa.

FOUR WAYS IN WHICH ROCKWELL EXCELS

RESEARCH • SAFETY • ACCURACY • SERVICE

ROCKWELL GAS METERS AND REGULATORS

AGJ Report from Atlantic City . . .

PARADE OF GAS PROGRESS

Imagination, Research Create New Vistas for Gas Industry's Growth

REFLECTING THE DYNAMIC NEW SPIRIT OF AN AWAKENED GAS INDUSTRY, the "Parade of Gas Progress" exhibition at the 40th annual A.G.A. convention in Atlantic City in October heralded the beginning of a jet-propelled "Renaissance" . . . fueled by imaginative research and energetic development of new ways and means to do more — better — with gas. The star-studded show of appliances and equipment, destined to boom the load of the nation's gas distribution companies, ranged in temperature from icy refrigerators to torrid new burners, in color from infra-red to flame-blue, in size from minute to enormous.

In this special report by AGJ's editors, you'll find highlights on the more than four-score items displayed by nearly 60 participating manufacturers.

For the never-ending search for new ways to build business, the gas industry "hunters" — equipped with the exciting new items from the "Parade of Progress" — are truly "loaded for load-building." Here's why:

GAS AIR CONDITIONING. Forging ahead with well calculated plans to capture its share of cooling load to fill summer valleys, the industry will soon have a wide range of gas-fired air conditioning equipment, from 3-ton home units to giant 2000-ton and bigger units.

COMMERCIAL COOKING. New thermostatic controls take the guesswork out of temperature control — and maintain specified temperatures — make new gas equipment the most reliable available today. Infra-red burners for broilers and other uses will make gas equipment even more desirable — assuring modernity with economy.

GAS LIGHTS. Who said the "gas light" era ended at the turn of the century? Overwhelming response of the public to this sensational new appliance has brought a boom in demand for gas lights, promises to be a valuable load-builder.

BURNERS AND CONTROLS. Chalk up the big improvements in appliances to the never-ceasing efforts of controls and burner manufacturers to produce units that will perform more functions quicker, better and safer. The venerable pilot light, for example, may be on its way out, doomed by new ignition systems. Burners are becoming more efficient, give more heat with less gas.

INFRA RED. Thanks to a modern adaptation of an old scientific phenomenon, ceramic mat gas fired heat generators producing infra-red heat are revolutionizing many processes requiring heat, and engendering new ideas for residential and commercial appliances, at far less cost than similar electric equipment.

INCINERATORS. Featuring "no smoke, no smell," gas-fired incinerators will sell . . . and sell . . . and sell. Another product of research and teamwork by the industry, they are promising load builders.

GAS REFRIGERATORS. Return of the efficient, economical gas refrigerator is assured, with three firms marketing new units and promises of more to come. Intensive research underway will bring new concepts to this field.

INDUSTRIAL. Increasing use of gas for multitude of industrial processes will be stimulated by such developments as the luminous wall system of instantaneous heat and widespread use of infra-red generators.

HOME LAUNDRIES. New combination washers-gas dryers — especially under-counter built-in models — will help gas capture even bigger share of this vast market. New dryers feature economy with high efficiency.

RANGES AND BUILT-INS. Everything the competition has — and a bit more. That's the story on new gas-fired residential cooking equipment . . . including remote control, push-button burner controls, foldaway burners, portable barbequers, vertical broilers, infra-red broiling, color-coordinated units, and other startling features.

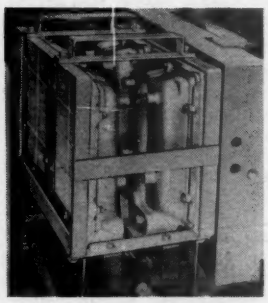
HEATING. New ideas in heating include high-efficiency pulse combustion units, high-velocity combustion units, and power-vented unit heaters — small and large — to meet every need.

PARADE OF GAS PROGRESS

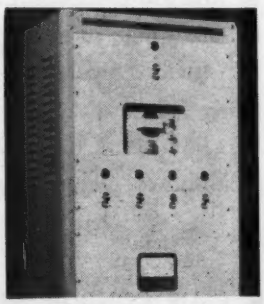
New Ideas Create Progress . . .

GAS APPLIANCES OF TOMORROW are featured in RCA-Whirlpool's Miracle Gas Kitchen. Heart of the kitchen is a "miracle gas center" where air and gas are pre-mixed to exact ratios and delivered under pressure to various units using "power burners." Burners need no secondary air, operate on a jet-engine principle. Center also produces refrigeration for the "Rotafreeze," corner-mounted rotating food freezer, and a wall-mounted refrigerator. Flush surface cooking burners have Pyroceram (ceramic glass) surfaces, heated by power burners. "Portaburners" are plug-in devices, use power-burners with electric ignition. Water heater also uses power burner, produces hot water instantaneously and continuously. Other features include infra-red oven, infra-red rotisserie, portable dishwasher, built-in washer-dryer.

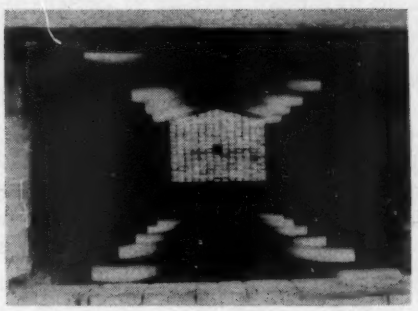
SCHWANK INFRA-RED GENERATORS, by Perfection Industries, are gas-fired infra-red generators that utilize ceramic elements with 200 perforations per sq. in. as burner for flameless combustion of gas. Heat of 1650 F produces infra-red radiation, which heats objects directly rather than by convection. Results in extreme efficiency and ability to focus heating effect.

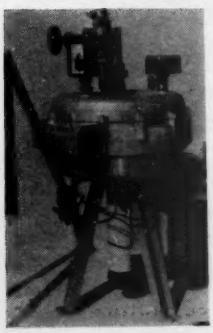


INFRA-RED INDUSTRIAL OVENS, utilizing Schwank infra-red gas burners, by John J. Fannon Products Company, are designed for application of gas radiant heat to industrial processes. Infra-red burner permits direction of heat to desired surface, heating only of materials in process. Units can bake enamel paint in two minutes, dry zinc plated steel panels in one minute. **Electronic Igniter** for gas appliances and industrial gas equipment, a new development unveiled at A.G.A. show, is completely automatic, operates in infra-red spectrum, has five fail-safe circuits incorporated in design.

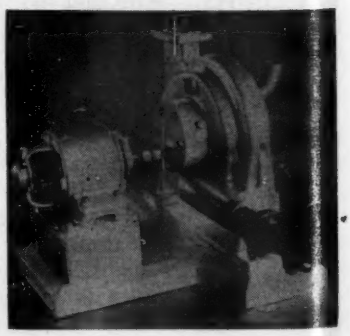


LUMINOUS WALL industrial gas furnace developed by A. F. Holden Company is new gas combustion system for use in specialized industrial furnace applications requiring rapid heating and cooling cycles. Utilizes entire wall of porous refractory brick as burner. Gas-air mixture flows through brick to produce intense, instantaneous heat upon ignition. Major heating effect produced through infra-red radiation. Fuel savings up to 40 percent. Temperatures of 1000 to 2000 F produced in shorter time than conventional methods, rapid cooling without damage to furnace linings.





TURBO-BOILER water heaters and generators developed by Dynamic Engineering incorporate revolutionary new principle of rapid heat transfer to produce water heating. Utilizes rotating heat exchanger to transfer heat of gas flame to water passing through unit. Speed of rotation is variable. Can produce heat rise of 100 F at rate of 5-gal per min. Turbo-Boiler Generator produces steam in rotating boiler, steam is shot into turbine section through nozzles. Self-powered after initial starting. Steam cycle takes place in one integral housing without external piping, valving, or governing devices. Produces 55 lb of steam per hour. Speed, output controlled by throttle in gas supply line.

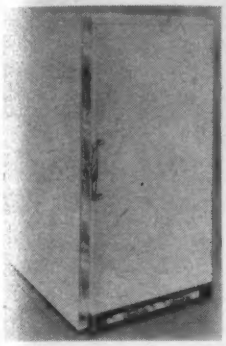


If you would like complete details on any item in this special 12-page feature (pages 23-38), write on your company letterhead to *Editor, American Gas Journal, Box 1589, Dallas 21, Texas.* We'll see that you promptly receive complete information.

Flames that Freeze . . .

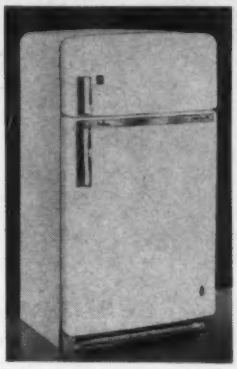
New models of gas refrigerators feature silent operation, no moving parts, ice makers

NORCO GAS REFRIGERATORS for 1959 are offered in modern slimline styling, available in 4 and 7 cu ft models. Gas-fired absorption-type refrigeration unit delivers even cold throughout the box. Across-the-top freezer is featured in the 7 cu ft model. Exclusive zip-tube permits quick lighting from the front. Unit has automatic controls, is approved by A.G.A. Shelves are pull-out style, adjustable to different heights. Square design requires no side clearance for opening, easily adaptable to built-in application.



NORGE GAS REFRIGERATOR introduced at the A.G.A. exhibit, has a new ice cube maker of entirely new design, will be on market in early 1959. Unit also features gas-fired refrigeration unit of Electrolux design, has approximately 11 cu ft capacity, full across-the-top freezer area. Square, modern design allows unit to be readily adaptable to built-in applications. Door swing design is full-out, with no side clearance needed. New units will operate on natural gas or LPG. Available in white and decorator colors.

RCA-WHIRLPOOL GAS REFRIGERATORS feature no moving parts and silent operation, automatic clock defrosting, and across-the-top freezers, including double-door openings. Available in a 11 cu ft model, two 10 cu ft models, and a 9 cu ft model, all units carry a full 10-year warranty on the gas-fired absorption refrigeration unit, in addition to a one-year warranty on the complete refrigerator. Whirlpool also exhibited an improved model (Phase II) in its gas refrigerator program.

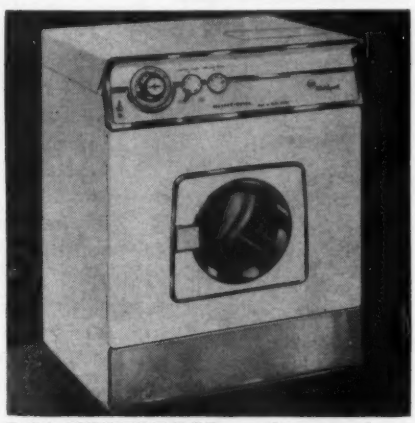


Gas Heat Replaces Clothesline Breeze . . .

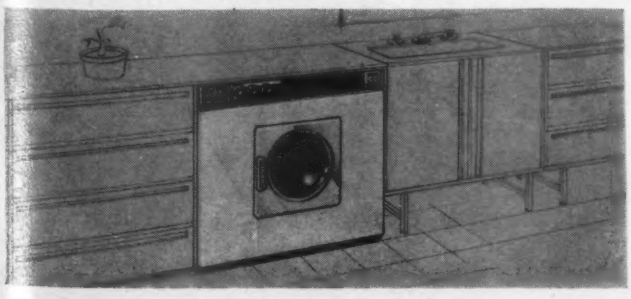
Built-in combination washer-gas dryers bring automation to home utility rooms

PHILCO has introduced a new combination washer-gas dryer that fits under a counter top. The gas Duomatic can change its "face" any time room decor is changed by simply replacing removable front panels. Unit washes and dries up to 8 lb in 1½ hours, has remote control panel. Philco also introduced new gas clothes dryer that "senses" proper degree of drying.

NORGE gas laundry appliances introduced at the A.G.A. exhibit included a combination washer-gas dryer, and a built-in (counter-top) combination washer-gas dryer unit. New Norge units feature two complete wash-and-dry laundering processes, controlled by three dials that give up to 21 different laundering sequences, four-way drying, and Hamper-Dor.



RCA-WHIRLPOOL washer-gas dryer combination has a built-in gas water heater burner that heats water during washing cycle. Unit features 33-in. width to save floor space, four-temperature washing, two-temperature rinse selector, lint-free washing by filter action, and five-temperature drying. Drying heat control is thermostatically controlled for safety.

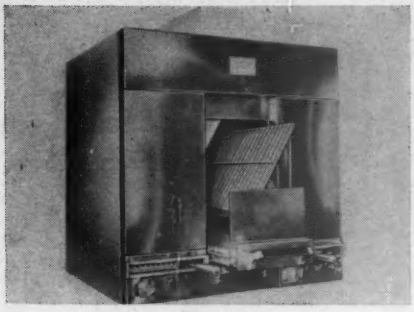


O'KEEFE & MERRITT combination washer-gas dryer exhibited at A.G.A. show is designed for undercounter, elevated wall, or cabinet installation. Features front access to all controls and electrical devices, pilot and main burner, all service connections, and front lint screen, providing fast, simple installation and easy removal. Unit has "Stedi-Speed" action with no vibration or spin. Dials are fabric-keyed. Unit has automatic water level control. Drying time is also automatic, regardless of load, fabric or room humidity.

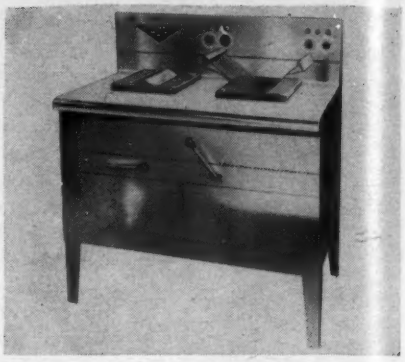
PARADE OF GAS PROGRESS

For the Chefs . . . Only the Best

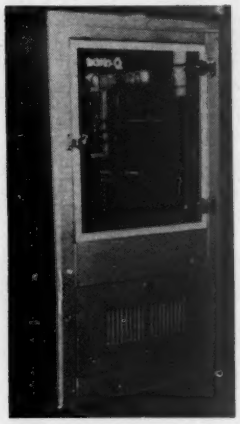
Commercial Equipment Highlighted by Infra-Red, Precise Heat Control



MAGIC-RAY's new V-100 gas-fired infra-red broiler takes only two to four minutes to broil an average steak, has a capacity of 280 seven-ounce steaks per hour. Unit uses Perfection Schwank Infra-Red generators, develops heat of 1650 F with 100,000 Btu input. Variation of radiation intensity is accomplished by simple manipulation of panel-mounted controls. Unit measures 42 by 34 by 36-in., weighs 500 lb.

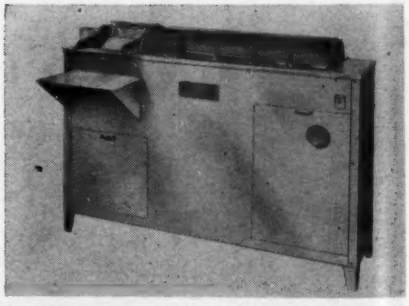


BROASTER COMPANY'S Red-Magic Broiler, features rapid "char-broiling" of steaks with deep-penetrating infra-red rays produced by gas-fired Schwank Ray-Head infra-red burners. Burners use 100 percent primary air, eliminating secondary air, and possibility of combustion of the meat. Unit has two degrees of heat, each with an automatic timer. Buzzer and light signal when steaks are ready. Two models available — one for six 15-ounce New York cuts, one for 12 cuts.

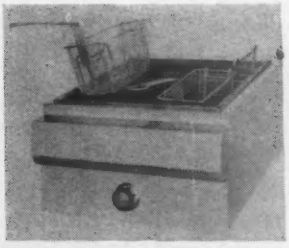


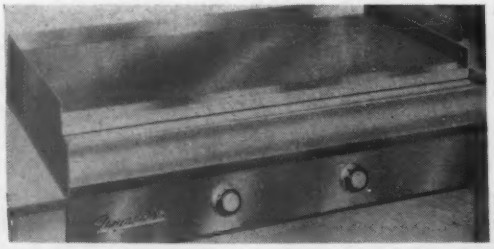
SUBURBAN APPLIANCE COMPANY's automatic gas-fired infra-red rotisserie, the Infrared Hickory-Q, reduces cooking time up to 80 percent and adds a natural hickory-smoked flavor through a patented smoking process. Unit can prepare up to 400 lb of meat per day, is completely automatic, and has an exclusive, patented self-baster. Matching companion appliance is a commercial gas food warmer. Cabinets are finished in porcelain enamel, cooking apparatus is ← stainless steel. →

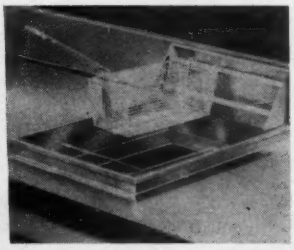
SPECIALTIES APPLIANCE CORPORATION'S new 14-in. Keating-Trump Special Fryer has 115,000 Btu per hour input, preheat time of less than five minutes, and a super sensitive thermostatic control. Temperature control range of dial setting is so close that differential between "on" and "off" temperature cannot be measured by ordinary mercury thermometer. Unit cannot be cooled off by overloading. Features include timers and indicating lights, stainless steel construction.



GIFFORD-WOOD COMPANY'S new approach to deep-fat frying is the Unifryer, an automatic, continuous operating fryer, using a screw-type conveyor, that replaces banks of conventional fryers. Unit has production capacity of 200 lb per hour, a heating input of 165,000 Btu, and fat capacity of 140 lb. Different frying times are achieved by loading at marked points, and foods are automatically unloaded. Unit is stainless steel, has thermostatic control with top temperature of 375 F.





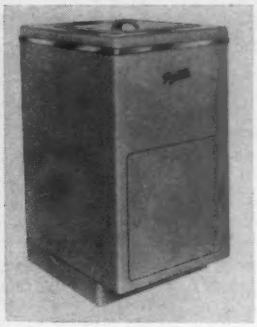


FRYMASTER CORPORATION introduced three new commercial cooking items at Atlantic City, illustrated above. **At left,** the "Jet" Counter Fryer, designed to exact width and depth of electric units for replacement of the electric types. Unit has lift-out frypot, 40,000 Btu input, 15 lb fat capacity, can cook 30 lb of potatoes in 60 minutes. **At center** is the "Jet" Griddle, gas-fired 1-degree thermostatic action unit with dual Fenwal thermostats that provide precision surface temperature control. Rated at 90,000 Btu, it is 18 by 36-in. size, and designed to match the counter fryer. **At right,** "Built-In" deep fat fryer for custom counter installation is available in 15, 35, and 55 lb capacities. Each is full-sized, fully insulated self-contained frying unit with 1-degree action thermostats, automatic safety pilots, infra-red burners, and deep cold zone for sediment collection.

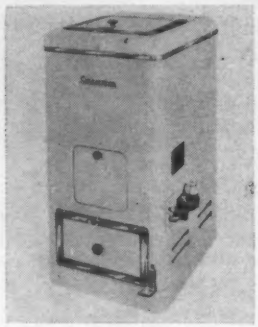
No Smoke, No Smell . . .

New incinerators are load builders, help solve air pollution problems

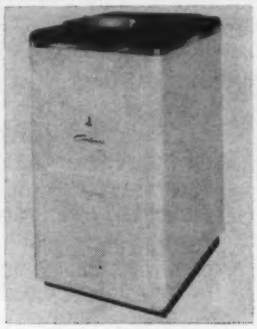
Basmor
Bastian-Morley



Smogmaster
Bowser, Inc.



Royal Deluxe
Calcinator

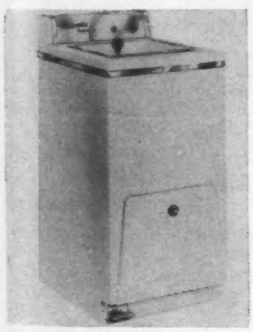


Gas Disposer
Caloric

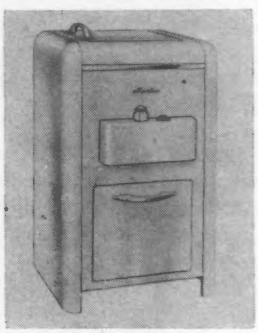
Disposall
Joseph Goder

SMOKELESS-ODORLESS INCINERATORS, a new concept in household appliances, have great promise as load builders for gas distribution companies. Designed to consume food wastes and trash without smoke or odor or other objectionable by-products, the new incinerators were produced only after extensive and costly research. The units—all A.G.A. approved—will consume practically all combustible items found in the home, and do it safely and economically. Using the incinerator is a simple process—the user loads the appliance and turns it on. The balance of the combustion process is automatic—a timer turns the unit off.

Manufacturers exhibiting incinerators at Atlantic City included: Bastian-Morley Company, Inc., LaPorte, Indiana; Incinerator Division, Bowser, Inc., Cairo, Illinois; Calcinator Corporation, Bay City, Michigan; Caloric Appliance Corporation, Philadelphia, Pennsylvania; Joseph Goder Incinerators, Chicago; Locke Stove Company, Kansas City, Missouri; The Majestic Company, Inc., Huntington, Indiana; Martin Stamping and Stove Company, Huntsville, Alabama; Queen Products Division, King-Seeley Corporation, Albert Lea, Minnesota; and Waste King Corporation, Los Angeles, California.

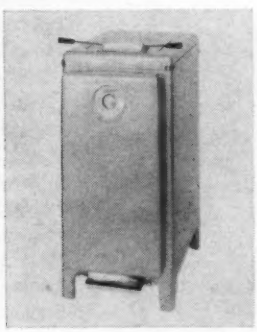


Supreme
Majestic



Burn-a-Way
Martin

Warm Morning
Locke Stove

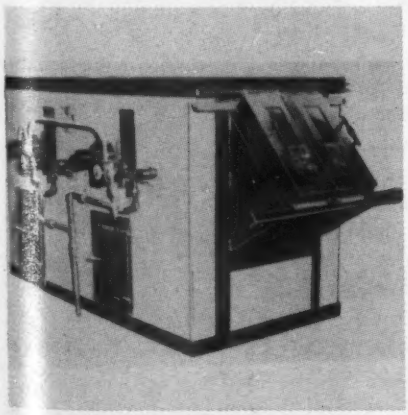


Thermo-Catalytic
Waste King

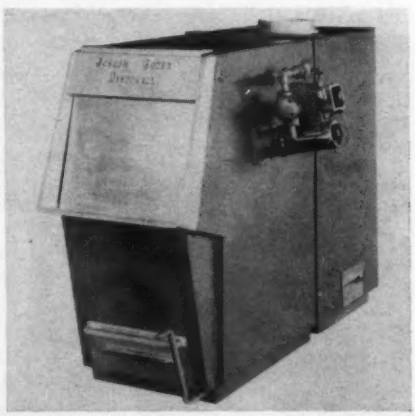
Superflame
Queen Products

Commercial-Industrial Incinerators Go Smokeless-Odorless, Too!

VULCANOR INCINERATORS for commercial-industrial use are smokeless, odorless, free of fly-ash. New line includes portable, prefabricated units of 50 to 150 lb hourly capacity and standard units of 200 to 600 lb hourly capacity. Features include two-chamber combustion principle, high input power burners, and automatic controls. Baffled traps in secondary chamber slow velocity, create turbulence for complete combustion by secondary gas burner.



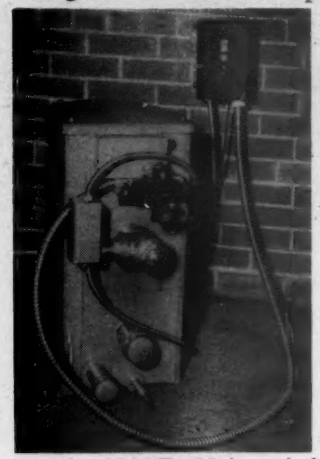
HEAVY DUTY GAS DISPOSALL is new large-size portable gas incinerator, capable of continuous 8-hour-per-day burning, designed for schools, churches, stores, small factories, and other commercial or institutional uses. Guillotine door and inclined, staggered step grates move waste downward in time with combustion process. Firebrick insulated units are smokeless, odorless, remove fly-ash, have automatic flame failure control and timer.

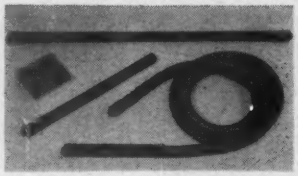


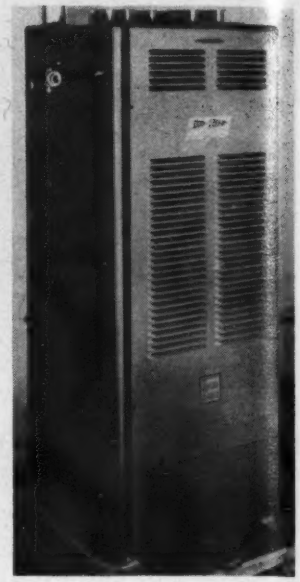
Inner or Outer Space...Gas Keeps It Warm!

New combustion concepts boost efficiency, heater designs take on "new look"

LUCAS-ROTAX pulse combustion heaters represent a new concept and development in central heating with gas. Pulse combustion principle achieves 95 percent efficiency in unit delivering 100,000 Btu per hour, compared to 80 percent efficiency claimed for conventional heaters. Advantages include small size of unit, fuel savings up to 20 percent, cool exhaust (as result of complete utilization of heat), savings in venting installations. Pulse ignition rate is approximately 70 cycles per second. Exhaust stack temperature is approximately 100 F. Unit switches on automatically at signal from thermostat, has fail-safe circuit with manual reset. Unit has A.G.A. approval.

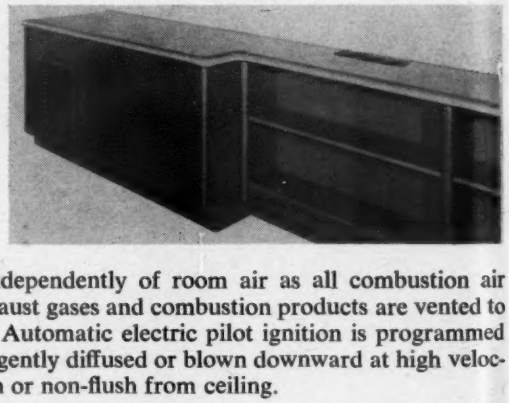


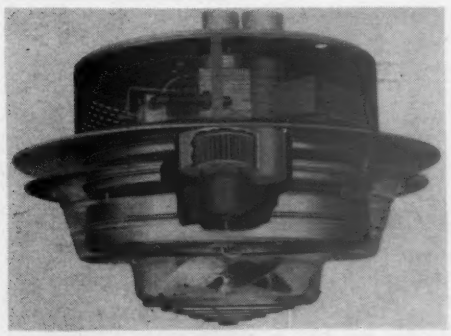


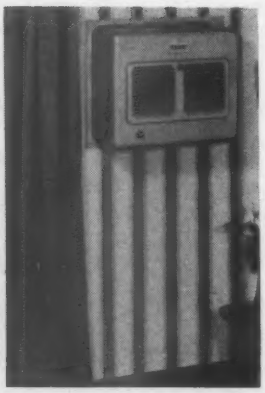


JET-HEET warm air heating unit is unique new heating device that uses one-fourth volume of air delivered at four times normal temperature rise and much higher than normal pressure. Air is delivered to aspirating registers, passes through a venturi system, mixes enough room air to produce required volume at desired outlet temperature. Uses forced-draft, jet-type burner to achieve combustion at maximum efficiency, reduces fuel costs 20 to 25 percent. Insulated flexible duct system.

NORMAN PRODUCTS display at A.G.A. exhibit included two items — a schoolroom comfort system and radial, flush-mounted overhead heaters. Individual schoolroom heating and ventilation system includes gas-fired wall furnace that utilizes 100 percent outside air for combustion, can be combined with bookshelf sections containing air circulation ducts. Damper assembly automatically blends fresh and recirculated air. Overhead heaters have sealed combustion system that operates independently of room air as all combustion air enters unit from outside. All exhaust gases and combustion products are vented to outside under positive pressure. Automatic electric pilot ignition is programmed by thermostat. Warm air can be gently diffused or blown downward at high velocity. Units can be suspended flush or non-flush from ceiling.







SUBURBAN APPLIANCE'S "Novent" and "Dynavent" gas space heaters are designed for installation in wall or window, solving space and decor problems. Sealed combustion eliminates use of room air for fuel, makes heater completely safe. Power venting draws outside air into unit for combustion, expels combustion products simultaneously. Solves heating problems involving cost, decor, and heating efficiency in motels, offices, bedrooms, etc. Units fit between wall studs without framing. Has 20,000 Btu input.

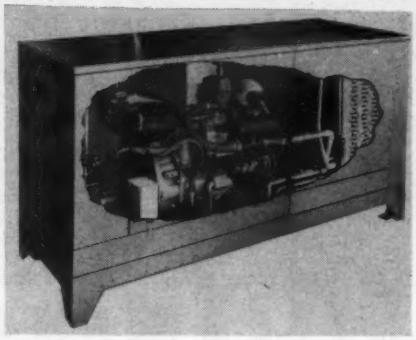
HERMAN NELSON "Univent" gas-fired unit ventilator system combines gas room heating with ventilation control in a single direct-fired gas unit. Product of American Air Filter Company, the unit is especially adaptable to remodeled classrooms, portable buildings, room additions, and temporary schools. Built-in burner and automatic temperature controls are featured. Installation is simple, requires minimum of connections. Removable air filter provides proper ventilation in buildings with or without central heating. Available with ducted cabinets of storage type. Controls can be electronic or pneumatic, as required.

Summer Load Builders . . . Real Cool Items!

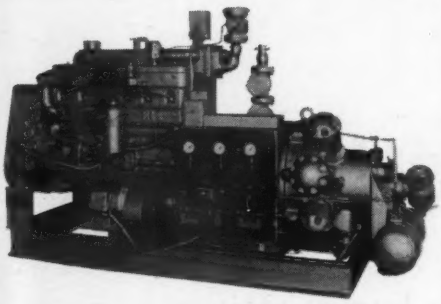
ARKLA gas-fired air conditioning equipment displayed at the A.G.A. exhibit included the "Sun Valley" all-year unit, available in 3½ and 5-ton capacities. Unit automatically cleans and circulates air, heats in winter; cools in summer. New **evaporative cooler cooling tower** has "Sun-Seal" design, eliminates direct sun contact with water, uses Munter's principle that gives far greater contact surface between water and cooling air. Packaged **25-ton water chiller** has factory-sealed absorption refrigeration unit, provides economical source of chilled water for many applications, is steam operated, has no moving parts.

Also on display was model of new **Sun Valley "Remote"** unit for installation outside the home, can be used as an "add-on" to provide gas-fired cooling in homes equipped with central heating systems. Unit uses water-salt solution for refrigerant, has reversible cycle for "heat pump" application, built-in evaporative cooler.

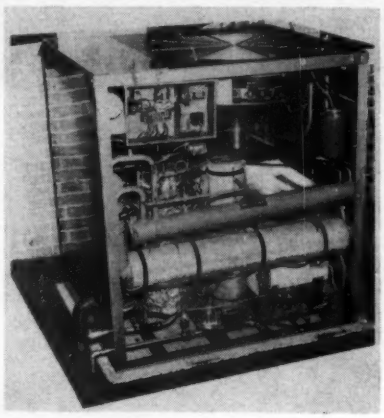
COMFORTEMP'S gas-engine driven compressor unit with water-cooled condenser for residential and small commercial air conditioning systems is primarily an "add-on" unit, adaptable to new or existing furnace ductwork. Available in 3 and 5-ton capacities, unit is designed for outdoor installation. Gas-fueled, liquid-cooled, internal combustion engine drives a four-cylinder V-type standard compressor. Engine has automatic starter. Dry-type centrifugal clutch engages only when engine reaches predetermined speed. Lubrication is automatic. No cooling tower is needed—unit uses a "flinger-wheel" that combines water spray and forced air to effect rapid heat transfer. Unit is housed in single, acoustically-treated cabinet. Standard thermostatic controls make unit completely automatic. Comfortemp also plans **air-cooled condenser units.**



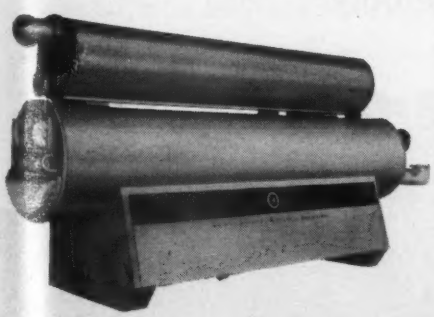
READY-POWER large capacity gas-engine driven, compression type air conditioners for industrial and commercial use are available in sizes from 22 to 76-ton capacity. Uses less than 13 cu ft of gas per required ton-hour; fuel consumption is in direct proportion to actual load over 80 percent of capacity range. Automatic speed control allows power unit to run at most economical speed for load. Temperature and humidity variations characteristic of "on and off" control systems are minimized through continuous operation of compressor, which is modulated to load-matched speeds.



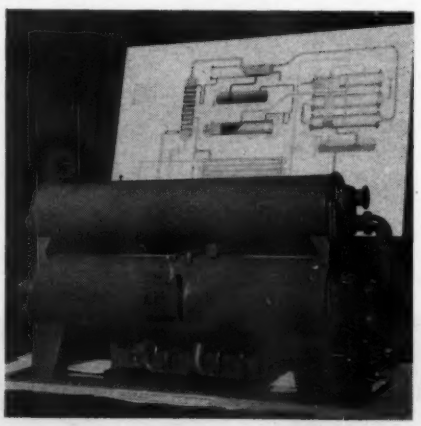
BRYANT gas-fired air conditioner is a remote, air-cooled absorption-type refrigeration machine, designed for outdoor installation. It produces chilled water for circulation through cooling coil applied to existing central heating systems. Needs no water tower or water supply. Present unit is 3-ton capacity; larger sizes under development. Can be used with all types of gas. Conventional cast iron burners and standard automatic controls are used. Fan and circulating pump motors operate on ordinary 110-v.



CARRIER large capacity gas air conditioning equipment—for large buildings, commercial and industrial establishments—is available in capacities from 60 to 700-ton. Equipment operates on absorption principle, using a lithium bromide absorbent, water as refrigerant, and steam from gas-fired boiler to power refrigeration cycle. Produces chilled water for circulation through cooling system. Operation is completely automatic, using time-clock, thermostatic control or manual, single push-button control. Only moving parts are three small pumps. Vibration free in operation, requires minimum of piping.



YORK large capacity gas air conditioning equipment includes two types of absorption units. Lithium bromide is used as absorbent in one type; other type uses ammonia. Gas-fired boiler produces steam to power refrigeration cycle. Both units provide chilled water. Lithium bromide systems available in sizes 100 to 740-ton capacity, ammonia systems in 115 to 350 ton capacity.



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- Make components more compact
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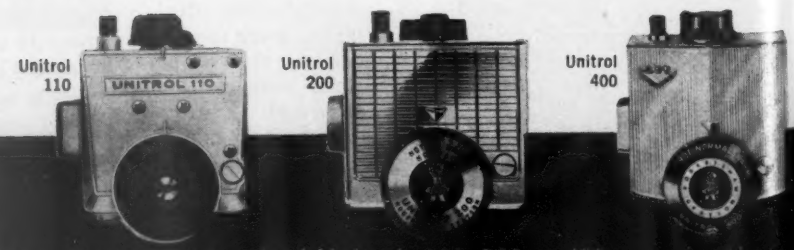

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...e smartest way to boost sales, the ultimate in appearance, dependability and efficiency... plus a new built-in pressure regulator.

UNITROL 200 ®
The smarter control with the stepped-up appearance to step-up sales... plus a new built-in regulator!

regulators built in!

Robertshaw announces the most advanced *new* water heater controls ever engineered—the ® * series... new Unitrols featuring built-in pressure regulators to increase your water heater ratings and sales! The basic Unitrol functions of thermostatic gas valve, main gas cock, 100% automatic pilot, pilot adjuster and pilot filter are included in combination with a built-in pressure regulator.

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The smart, low cost water heater control featuring the dependability and savings of the Unitrol 110... plus a new built-in pressure regulator!

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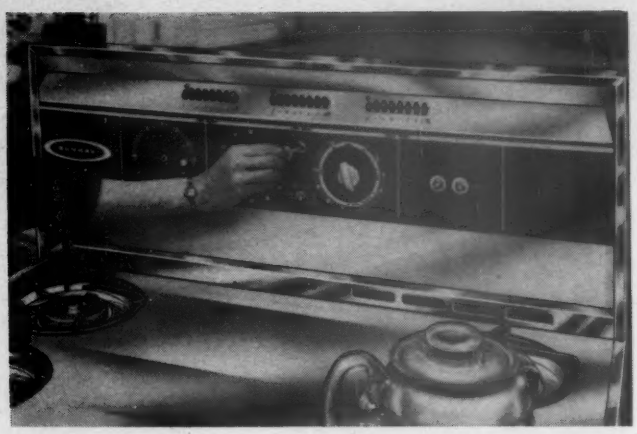
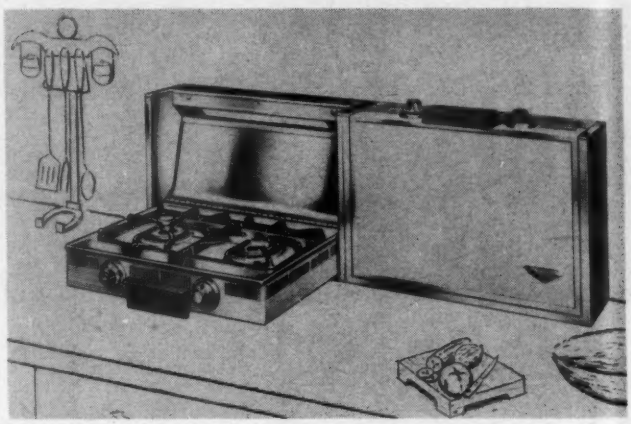
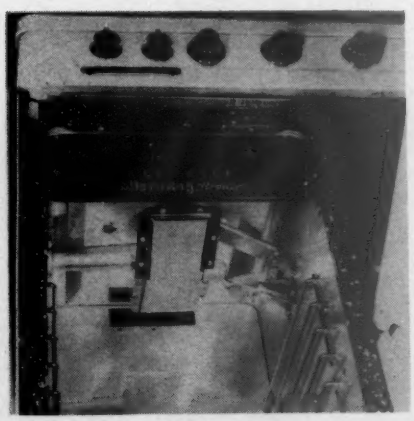


"TOUCH OF TOMORROW" is evident in this push-button, remote-control gas range by Sunray Stove Company. Burners can be turned on or off by touch of button on mercury-battery powered electronic control box. No wires needed. Receiver on range operates gas valves that can be pre-set to desired heat; antenna is mounted on range. Features include banks of pushbuttons on range for burner heat selection, thermostatic top-burner temperature controls, clock timer control for top burner and oven, and a "safety key" locking device that turns off both gas and electricity as protection for children who might tamper with the range, and a "Catchal-ator" roll of aluminum foil in the oven bottom with knife to slice off soiled lengths. In event of power failure, oven and one burner can be turned on manually.

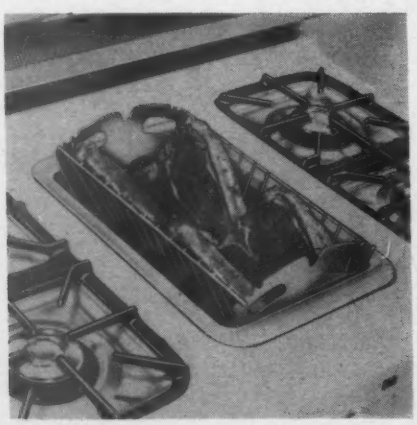
FOLD-A-WAY GAS BURNER UNITS developed by Dixie Products, Inc., represent a new concept in gas appliances for kitchen planning and a new realm of cooking convenience for homemakers. The counter-top burners, which fold into a slim, square-cornered cabinet when not in use (occupying less than one square foot of counter space), can be used in homes or restaurants. Can be used as auxiliary burners or built-ins to replace conventional ranges. May be used outdoors with LPG. Fold-A-Way features include thermostatically controlled top burner, automatic gas shut-off when unit is folded away, continuously burning needle-point pilots, a light that comes on automatically when burners are lowered, convenient electrical outlet, etc.



Infra-Red Burners Make Outdoor Charcoal Grills Old-Fashioned!



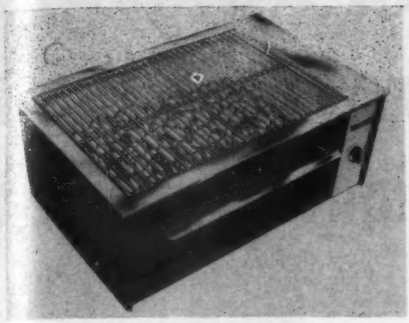
MICRO-RAY BROILER in new gas range by Hardwick Stove Company uses Schwank infra-red burners that eliminate pre-heating, cut cooking time, reduce fuel consumption by one-half. Broiler is equipped with rotisserie spit and thermostatic control. Infra-red burners generate energy in the three-micron wave length at a temperature of 1600 F.



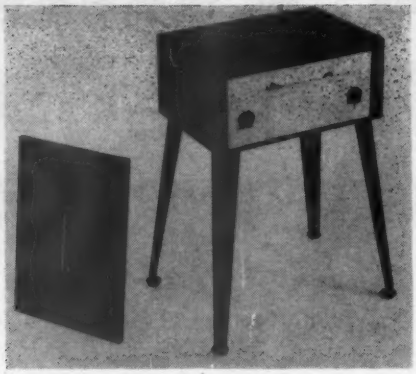
VERTICAL BROILING on the range top is featured in Roper's new "Rotis-O-Grill" available on newest models of ranges in firm's line. Top mounted broiler uses gas-fired Schwank infra-red burners, which are recessed and positioned to aim heat low. Unit also converts to a convenient rotisserie and to a built-in griddle. Covered, it provides extra range-top work space.

VERTICAL BROILER in new Norge gas range uses Schwank gas-fired infra-red burners on each side. Infra-red heat generated by the burners broils quickly and thoroughly and permits surface charring or sealing of meats for charcoaled flavor. Schwank burners utilize special ceramic material, have a 100 percent primary air burner, low burner head pressures.

New Ideas: Ceramic Coals Replace Charcoal, Jet Engine Principle Applied To Cooking Ranges

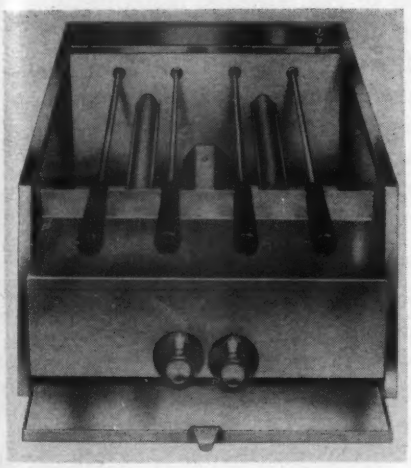


CHAR-GRILL by Majestic is built-in broiling unit utilizing special ceramic coals to hold, distribute heat from 25,000 Btu gas burner. Drippings fall on glowing coals to create char flavor. Unit is firebrick insulated.



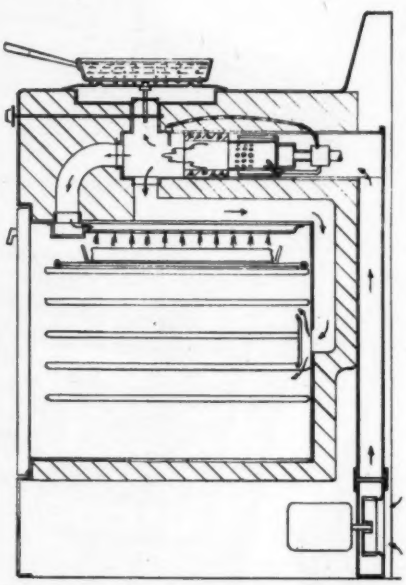
ARKLA gas-fired grill using ceramic coals is designed for indoor or outdoor installation, portable use. Engineering model displayed.

CHAR-GLO gas-fired broiler uses creamic coals to produce charcoal flavor in meats, fowl, etc., is designed for indoor cooking. Gas flame eliminates smoke, ashes, grime. Has tilt-back grill to control flare-ups. Fully insulated.

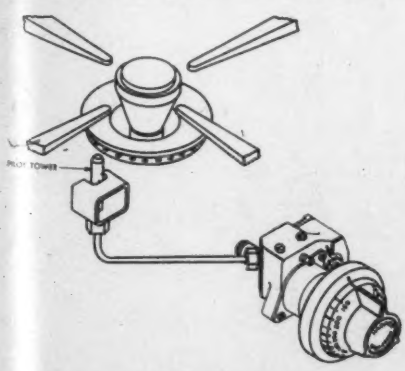


DINNER-ON-A-DAGGER is new counter-top gas-fired broiling unit by Dixie Products. Has four daggers turned automatically by small electric motor, cool Bakelite handles. Removable tray collects drippings, cleans easily. Needs only one gas connection.

JET-HEET GAS RANGE is basically new approach to cooking with gas. Open flame is replaced by heat passing through perforated plate. Air is heated to 1000 F by central jet-type burner, directed to range top or broiler outlets. High velocity air stream compensates for lower temperature. Utensil heat regulated by automatic controls. Eliminates exposed flames, radiation heat, flame flash from spillovers; cooks faster, has higher input. **Jet-Heet Hamburger Grill** for commercial use utilizes same principle.



HARPER-WYMAN "Unimatic" thermostatic top-burner control is equipped with integral "Flame-Selector" feature that permits adjustment of maximum flame size to suit material and size of cooking utensil. Allows for differences in heat conductivity of various utensils and adjusts flame automatically to pan temperature. Employs single knob control. Temperature range from 150 F to 400 F plus "LO" and "HI". Flame size is adjusted first, then knob is pushed in and temperature setting made.



ROBERTSHAW-FULTON "Flame Set" top-burner thermostatic control for gas ranges provides adjustable setting for maximum flame size as well as for temperature. Miniaturized unit has a built-in gas cock. Pilot, by-pass, and calibration adjustments can be made from front of device. Two sensing heads available — ¾ and 1¼-in. With "Flame Set" control, homemaker dials "HI" to light burner, turns back to adjustment zone to select flame size, then dials temperature zone.

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constant high power • uniquely accurate se

Actual Size

American's new ***GASCLOK*** is a completely self-contained air or gas powered instrument drive and timing unit. Supplying a constant power output of over 20 times the torque delivered by conventional spring-wound clock mechanisms, it is ideally suited as either original or replacement equipment where continuous power and accurate timing are essential.

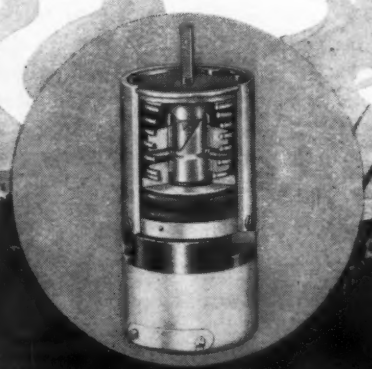
Perfect for all circular or strip chart records from one-hour to 30-day periods. Constant power and timing accuracy are assured since there is no "mainspring" to weaken or run down. Rugged durability and dependability are built into the ***GASCLOK*** Power Drive for years of service with minimum maintenance. It can provide new metering accuracies and economies for you.

for instrument driving and timing
self-starting • air or gas operated

The versatile ***GASCLOK*** Power Drive is designed and field-tested for long trouble-free operation in remote location installations with all makes and types of recording instruments.

The high-torque, continuous drive provides power for: *Integrating Orifice Meters—Gas Lift Meters—Pressure Recorders Strip Chart Recorders—Telecounter Units—Field Program Timers* and many other instrument applications for accurate, automatic operation.

- **Self-starting mechanism completely self-contained—requires no winding or "priming" of power unit.**
- **Gas or air consumption only 5 cfh—normal operating pressure 5 psi—rotation 2 rpm.**
- **Timing escapement spring rewound every 5 seconds—eliminates fluctuating torque.**
- **Accuracy of timing unaffected by wide fluctuations in supply pressure.**
- **Timing mechanism internally sealed to prevent corrosion and clogging—all power unit parts exposed to gas are aluminum or stainless steel.**
- **Inherently explosion-proof.**
- **Large area internal ports to prevent plugging. All internal ports easily cleaned.**
- **Installation in any position—variety of mounting brackets available.**



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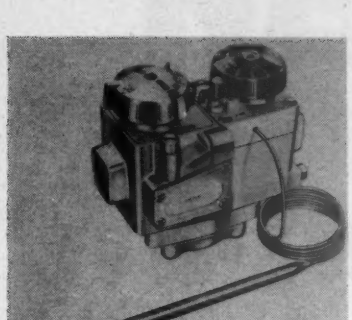
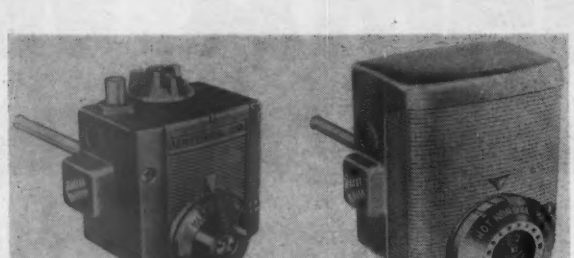
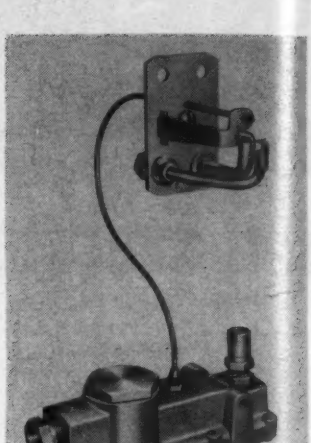
Automation? New Controls Lead Way . . .



Unitrol 1000



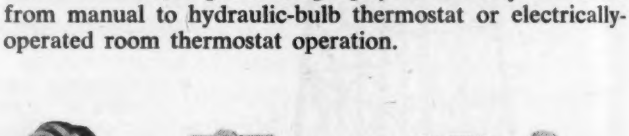
Unitrol 110 Unitrol 200



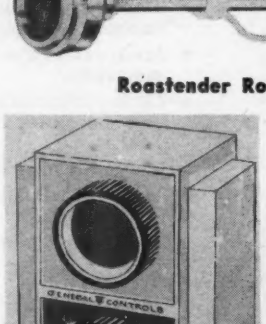
Flame-Master

ROBERTSHAW-FULTON CONTROLS' new products at A.G.A. show included new *automatic pilot for gas range ovens,* the "Flame-Master," operated by a vapor-pressure system; unit offers cool standby ignition, can be easily lighted and relighted by housewife, eliminating service calls; has no pushbuttons. Complete line of new *gas water heater controls* with built-in pressure regulator, available in Unitrols 110, 200, and 400, is completely redesigned, all-in-one assembly, offering 60 percent space saving over separate control-plus-regulator devices. New Unitrol 1000 is *combination control for gas heating equipment,* easily converted from manual to hydraulic-bulb thermostat or electrically-operated room thermostat operation.

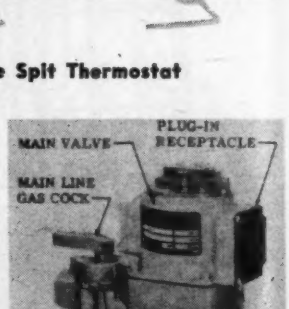
GENERAL CONTROLS' new products at A.G.A. show included six new devices. *Roastender Meat Thermometer,* probe-type device, shuts off gas and actuates signal when roast reaches desired "doneness." *Roastender Rotisserie Spit Thermostat* is similar unit, has dial on forward end with various settings, includes automatic shut-off and signalling. New *Water Heater Control* (also adaptable to space heater control) has built-in pressure regulator, can be used with automatic pilot thermostat and gas valve. *Indoor-Outdoor Control Package* combines inside room thermostat with outdoor compensator to adjust indoor temperatures to outside conditions. New *water heater "Hi-Limit" control* is tank mounted bi-metal switch that opens at pre-set temperature for complete shutdown. *Hydranoid Valve* is new control for gas heating appliances that incorporates manual main shut-off, manual pilot shutoff, filter, pilot adjustment, pressure regulator, main automatic control valve, plug-in pilot safety, and "Dial-A-Flo" feature to secure proper openings for various appliances and reduce roll-out or flash-out of main burner on ignition.



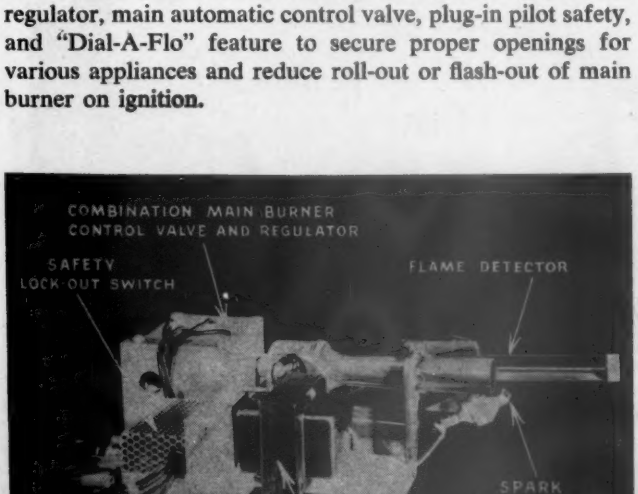
Roastender Rotisserie Spit Thermostat



Water Heater Control

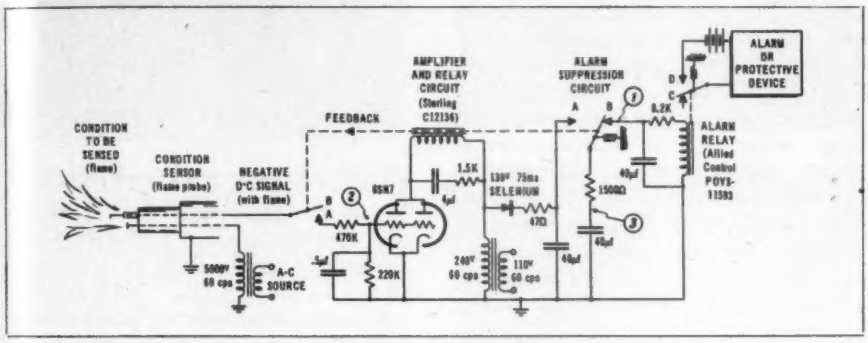


Hydranoid Valve

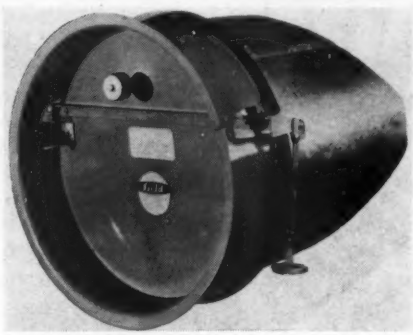


AUTOMATIC DIRECT SPARK IGNITION SYSTEM introduced by Controls Company of America provides direct ignition of main gas burner by intense electric spark, eliminates conventional glow-coil igniter, prevents pilot failures, is fail-safe in operation. *Main burner control valve and regulator* serves as pressure regulator and flow control valve. Valve is electro-magnetic type, with soft seat, spring-loaded for 100 percent tight shut-off. *Flame detector* is thermally actuated switch, responds to main burner flame, shuts off main burner in case of ignition failure, controls spark and terminates it when burner ignites. *Spark ignition transformer* provides the high voltage spark through the *spark electrode.* System is energized by timer and thermostat. When circuit is completed by timer, and thermostat calls for heat, transformer and main burner valve are energized, burner is ignited, and flame detector reacts to heat, causing spark discontinuance. Safety lock-out energizes if burner doesn't ignite. System automatically resets after timer period expires, repeats procedure.

MINNEAPOLIS-HONEYWELL introduced at the A.G.A. show a new line of water heater thermostats and controls for small gas heating appliances. Units are designed for ease of installation, accomplished through use of built-in pressure regulator, eliminating need for separate components. Water heater thermostats are available with or without factory-mounted pressure regulator that is located between safety control and thermostatic valve, a location design said to improve ignition performance and provide unregulated pilot gas operation to assure stable gas pressure to pilot at all times. Heating appliance line is designed for gas-fired wall and room heaters of 61,000 Btu capacity or less. Product line includes gas-cock Pilotstat with pressure regulator, gas-cock safety control with snap-action remote bulb thermostat, and 24-v manifold.

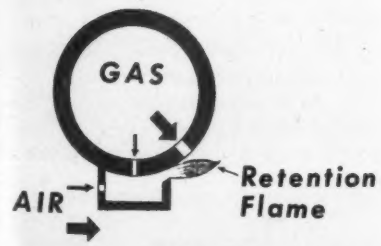


SCULLY SIGNAL COMPANY "Fail-Safe Gas Flame Monitor" uses new technique for monitoring output of operating systems to serve as check on monitoring system itself. Failure in performance of either operating or monitoring system causes appropriate warning or corrective action to be taken. Essentially, monitoring system is subjected to periodic checking signal that modulates the normal—or safe—operating condition of the monitoring system. Failure of either operating system or monitoring system halts required oscillation and sounds alarm or initiates corrective action. Unusual feature is that equipment has no electronic component whose failure would cause an "unsafe" condition. Diagram above illustrates flame sensing application.



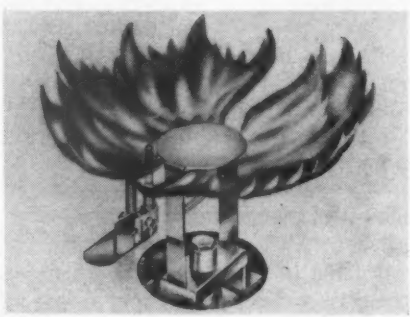
FIELD DRAFT CONTROLS by H. D. Conkey & Company are precision, heavy-duty barometric draft controls designed for use on industrial furnaces and boilers. Replace conventional draft hood, provide draft assistance of chimney not possible with draft hoods. Occupies only fraction of area required for draft hood, can be equipped with spillage-detecting switches if required by local codes. Underwriters' approved.

New Burner Concepts Boost Efficiency . . .

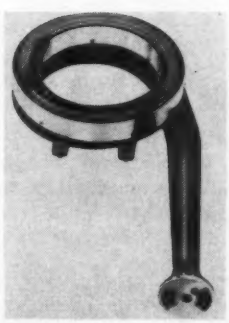


SECTION THROUGH RING

WEBSTER ENGINEERING COMPANY has new heavy duty commercial and industrial ring gas burner that creates highly stable, positive retention pilot flame in ring around main high-velocity jet, by bleeding portion of mixture into low-velocity area for ignition. Design eliminates flame-outs; permits quiet, vibration-free operation over wide range of input in small spaces.



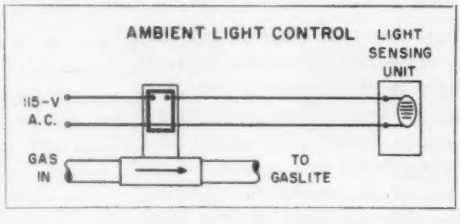
W. L. JACKSON COMPANY's "Magic Mix" burner for water heaters, utilizes modified impingement design based on PAR research program of A.G.A. Air adjustment is "built into" burner design, assuring high efficiency through life of burner. Features easy installation, reduced service problems due to sooting and linting, no loss of efficiency due to poor air adjustment.



SOUTH BEND "Jet Speed" top burner for commercial gas ranges features high-speed center-fired, open and uniform heat burners, based on designs developed under PAR research program of A.G.A. Features larger burner head and venturi areas. Air and gas mix thoroughly in venturi and lower burner head, before passing to upper head. "Retainer flame" retards secondary air upward flow.

Return of the romantic gas light to the American scene marks a complete cycle in the history of the nation's gas industry. Because of the gas light, the gas industry came into being . . . reaching its peak in the gracious "gas light era" . . . and later becoming a dynamic force in our modern economy. To the homeowner of the mid-20th century, the soft-glowing gas light is a welcome relief from the harsh illumination of Edison's creation . . . and to the gas utilities, a brilliant incentive to sell a "new" load building appliance and increase annual gas sales. For the utility selling them, and to the homeowner or businessman desiring them, a great variety of gas light equipment is available. . .

AMBIENT LIGHT CONTROL, an automatic device that "turns on" Gaslites when outdoor light falls below a predetermined level, is one of the newest items from Arkla research. Basically, the unit is a photo-electric cell that "senses" light conditions, and operates a solenoid gas valve to individual or multiple light installations. Arkla's new **"Doorman"** model Gaslite is equipped with a pilot light and a manual by-pass valve; pilot burns continuously, consumes about ½ cu ft per hour. When light is desired, valve is opened and full flame light is produced. Same pilot and by-pass system is used with the ambient light control. Also on display at A.G.A. exhibit were Arkla's three other Gaslite models—the tilt-top Cabildo, the Flair, and the Heritage. Arkla also markets nationally the reconditioned Welsbach lights that once graced Baltimore and Philadelphia streets.

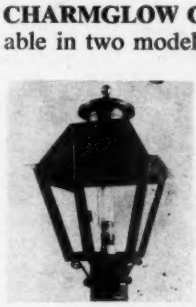


YORKTOWNE GAS-LITES are of cast aluminum construction in designs that combine modern engineering with authentic reproductions of traditional styling to provide Old-World elegance and charm. A number of accessories—including posts, brackets, pier bases, and sign brackets—make the Yorktowne series especially versatile for outdoor applications. Burner assembly utilizes vertical Bunsen burner principle, and pyrex chimney is used. For natural or LP gases.

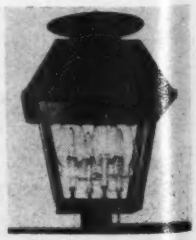
FALCON GAS-LAMPS for outdoor illumination feature "Gay Nineties" design, all-steel frame, flint glass mantle chimney to eliminate normal breakage. Lamps are unaffected by wind or rain, have bonderized finish that is phosphatized to resist corrosion, available in black or bronze baked enamel. Can be operated on natural or LP gases.

VERITAS GAS LAMPS are reproductions of outdoor gas lights of early Philadelphia designed by Benjamin Franklin. Construction of lamps is of solid copper, wrought iron, and solid brass. Made by Veritas of London exclusively for Equitable Gas Company, the imported units are available with a variety of posts, one of seamless aluminum tube and three of precision lathed and milled dry northern white pine, completely treated for protection against elements and insects.

CHARMGLOW GAS LIGHTS, available in two models—satin black finish and natural copper finish, are constructed entirely of copper. Lights feature pressure regulator on lamp, machined burners, and access door in the side of the body of the lamp. All parts of the lamp fit inside the lamp or post and are easy to service. New "Adjustapost" is a telescopic post, permits easy adjustment to desired height; has a copper supply line that can be cut to desired length while upper section is in lowered position.

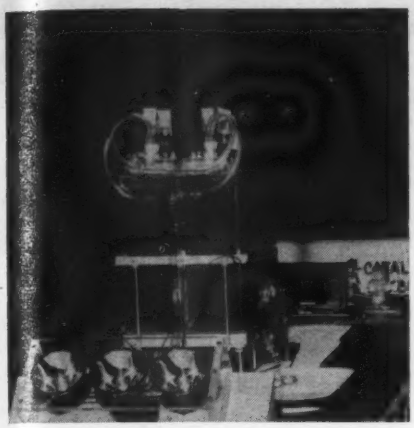


GAS-GLO LAWN LITES by Bruest are available in six models—Sentinel, Reverie, Moderne, Flambeau, Executive, and a four-mantle Reverie design for street lighting, all for outdoor installations. Two types of lights are available—open flame and mantle. Mantle type lights are equipped with a specially designed burner with ring that adjusts to provide proper air-gas mixture. All units have snap-on hoods, double strength glass that snaps in place, and the 3-in. OD posts are marlex polyethylene coated for maximum protection.



The Wonderful World of Wizardry

"Parade of Gas Research" Exhibit PRESAGES FUTURE GAS MIRACLES

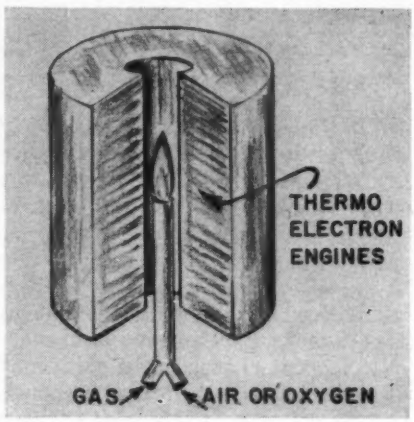


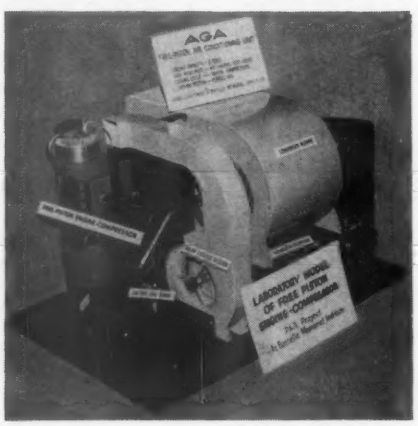
◆ **Fuel cell** produces electricity through oxidation of a fuel. Efficiency is as high as 80 percent — compared to 30 to 35 percent for generating stations. Basic cell is small (1 cc per watt output). Work is underway on unit that will "burn" methane.

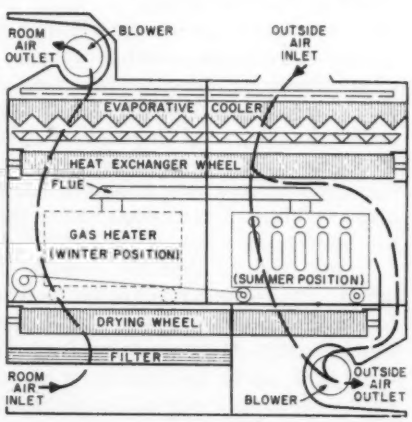
◆ **Flameless combustion of natural gas** produces efficiencies up to 99 percent. Virtually 100 percent recoverable heat in convection operation, 70 to 75 percent of output in radiant energy operation.

Direct conversion of heat to electricity is possible with the Thermo-Electron engine. Device uses natural or LP gases with air or bottled oxygen. Several such cells in a 1-cu-ft box could provide all electrical requirements ◆ of average home.

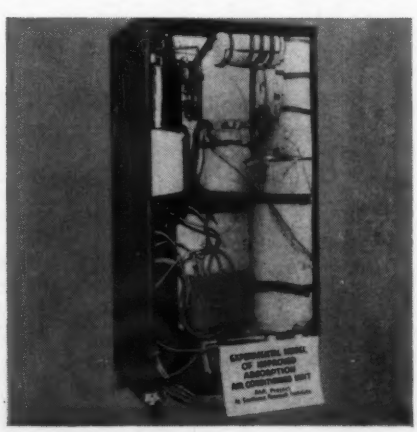
Thermocouple-cooling by the Peltier ◆ effect is century-old principle that may become commercially possible using newly-developed semiconductor materials.







New look in gas air conditioning equipment is reflected in experimental and prototype units shown at A.G.A. meeting. Models include gas engine-driven unit (upper left); free-piston engine-compressor (above); open 'sorption unit (upper left); long-life, gas-fueled, internal combustion engine under development (lower left), and improved absorption system unit (lower right).



Using Pipe-To-Soil Graphs Effectively

John Emery, *Assistant General Superintendent*
Rio Grande Valley Gas Company, Brownsville, Texas

PIPE-TO-SOIL GRAPHS are one of the most valuable aids in getting a quick overall picture of the existing situation when applying cathodic protection to existing gas distribution systems.

Pipe-to-soil readings are usually taken with reference to a *copper/copper sulfate half-cell* and the readings are negative. Experiments have established that steel pipe in the earth may be prevented from corroding if enough current is flowing to the pipe to overcome all current tending to leave the pipe. This point has been established in several ways; the most commonly used criteria in cathodic protection of coated pipe is a negative voltage between the pipe and the soil of .05-v when using a copper/copper sulfate half-cell electrode as a ground contact. Use of this half-cell electrode is primarily to minimize any polarization.

Actual voltage readings, usually in the range of 0 to 2.5-v, are taken with a potentiometer or high resistance field-type voltmeter. High resistance is necessary in voltmeters used for these readings to prevent current flow and large errors in voltage readings.

After obtaining these potential readings on a line at any predetermined constant interval along the line, the degree of cathodic protection can be seen by inspection. Many other facts may become apparent by plotting these voltage readings against the intervals at which the readings are taken.

As a rule, such graphs of lines protected by rectifier current show sharper breaking curves than graphs of lines protected by sacrificial anodes. There are definite uses for both types of cathodic protection and many factors are involved in determining which type to use for protection in any given case.

The accompanying graphs of *pipe-to-soil readings* plotted against *miles of line* serve to illustrate 12 typical graphic tools for use by corrosion control personnel:

Fig. 1 shows a typical bare line with no cathodic protection. Voltages are low and more active corrosion is to be expected at the points with lower readings. Such readings taken on lines before the application of cathodic protection are often referred to as "normals." Most corrosion people take these initial readings and plot them graphically before proceeding with the addition of protection.

Fig. 2 plots a coated line with the services insulated in one case and not in the other. Comparison of readings in Fig. 2 to those in Fig. 1 shows the pipe-to-soil readings of the coated pipe to be higher than those on the bare pipe, indicating less corrosion or a slower overall rate on the coated pipe. This is generally true of lines in similar soil.

In fact, a corrosion engineer working in a single section of similar soil can predict rather closely the quality of coating of a pipeline from the "normal" pipe-to-soil readings. In Fig. 2 it may also be seen that the voltage readings are higher with fewer contacts

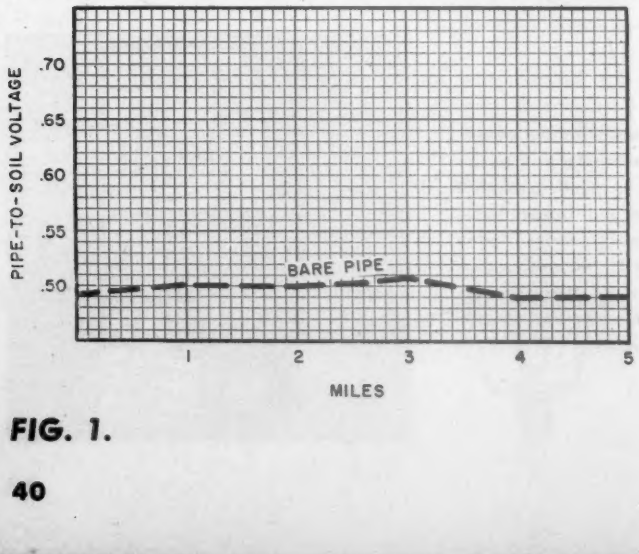


FIG. 1.

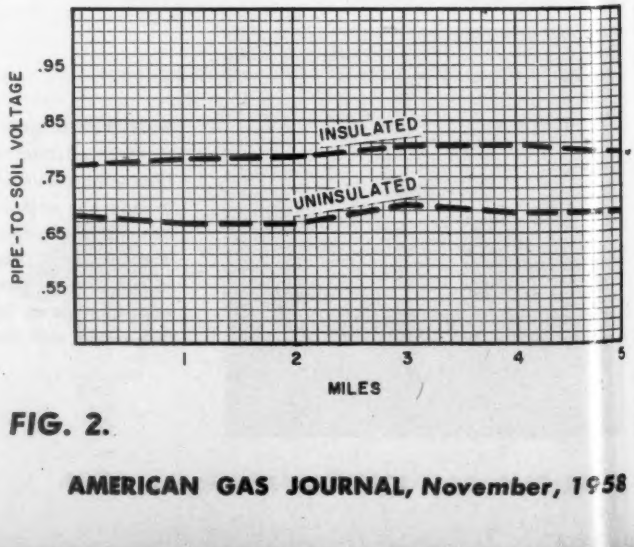


FIG. 2.

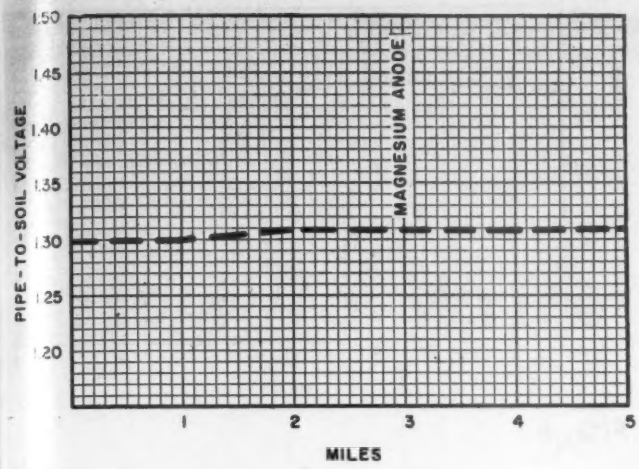


FIG. 3.

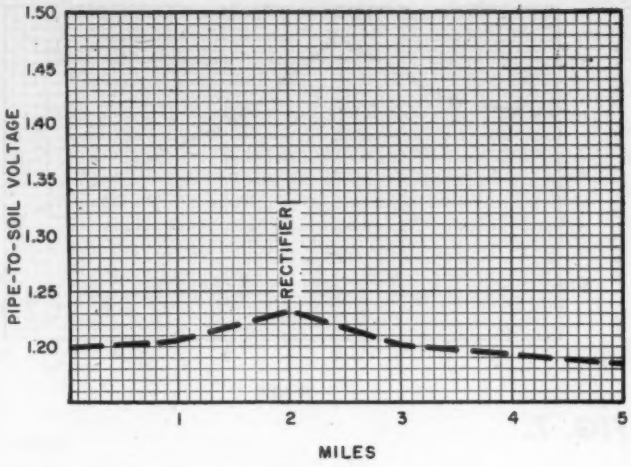


FIG. 4.

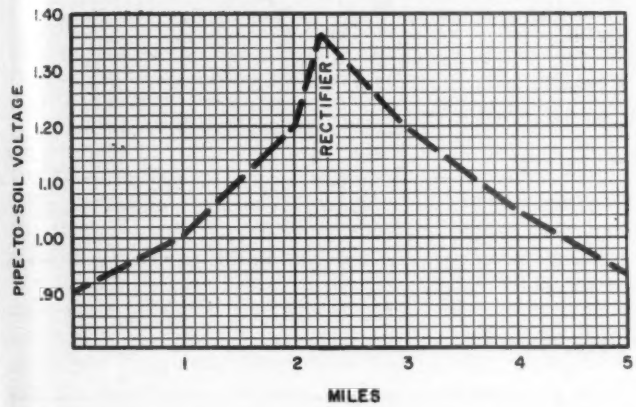


FIG. 5.

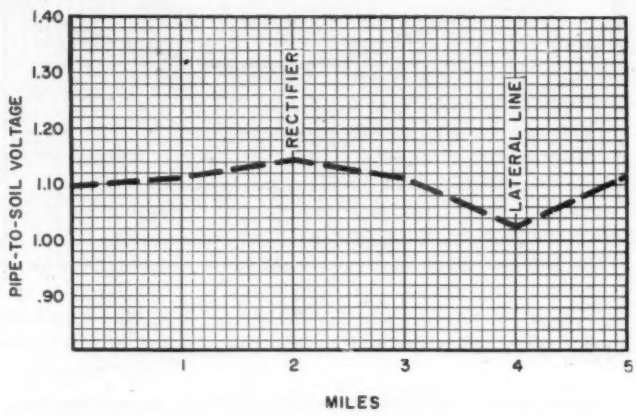


FIG. 6.

draining current from other structures. *In other words, the corrosion rate of a given line can usually be slowed, and pipe-to-soil voltages raised slightly, by the simple expedient of insulating taps on the line.*

Fig. 3 plots a typical well coated, insulated line, over-protected by the use of magnesium anodes. These voltages are considerably above those of Fig. 1 and 2, indicating that the line is under complete cathodic protection. Note that this graph is practically a straight line, indicating a well coated line being protected by a rather even flow of current to all sections. Complete protection could be had with less current, and any current that forces the pipe-to-soil above .85-v is theoretically being wasted. In actual practice it is not unusual, on well coated lines, to raise this pipe-to-soil above .85-v to allow for seasonal drops of pipe-to-soil due to low moisture content of the soil. On well coated lines, it is not always practical to adjust the output of sacrificial anodes on short sections of pipeline.

Fig. 4 plots reading of a typical moderately well-coated line protected by the use of a rectifier and ground bed. Compared with Fig. 3, the curve is not as flat and level. This is due to the concentration of current at the ground bed, which raises the voltage at this point to obtain the desired protection at the ends of the line. Theoretically, and actually, a number of smaller units would protect this line with less current but not necessarily more economically.

Fig. 5 shows a typical large, bare line under cathodic protection by the use of a rectifier and ground bed. This is similar to Fig. 4, except that the curve is much steeper, indicating an even higher concentration of current at the ground bed and poor distribution of protective current down the line. Large bare lines may be protected by the use of current drainage alone, but it is not usually the economical method of protection. Such things as "hot spot" protection and in-place coating should be considered on this type of line.

Fig. 6 shows a coated line under cathodic protection using a rectifier; a coated lateral line, attached at mile four, is protected by current drainage from the main line. This drainage is shown by the dip in pipe-to-soil reading at that point.

Fig. 7 is an example of a line being cathodically protected on one end and not on the other due to failure of an insulator on one end of the line. Failure of one insulator can drain off all protective current of long stretches of line and is not uncommon. Establishment of cathodic protection on a system is only the beginning of a corrosion control program. These readings must be checked constantly to assure continuous protection.

Fig. 8 shows a typical small line protected by the use of distributed sacrificial anodes, but containing an insulating joint. The abrupt change at mile three in indicative of a high resistance joint, possibly a coupler with rubber gaskets that insulate. When attempting to drain long stretches of line as a con-

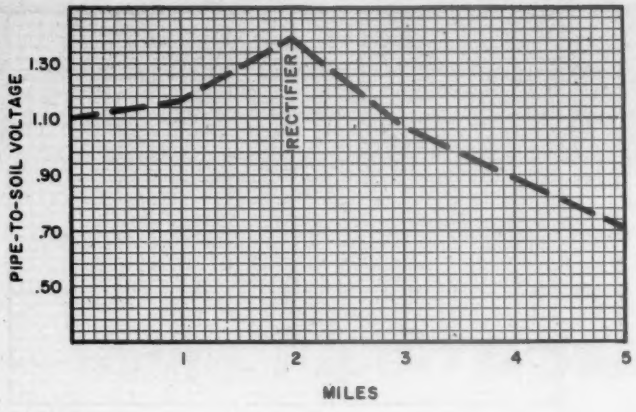


FIG. 7.

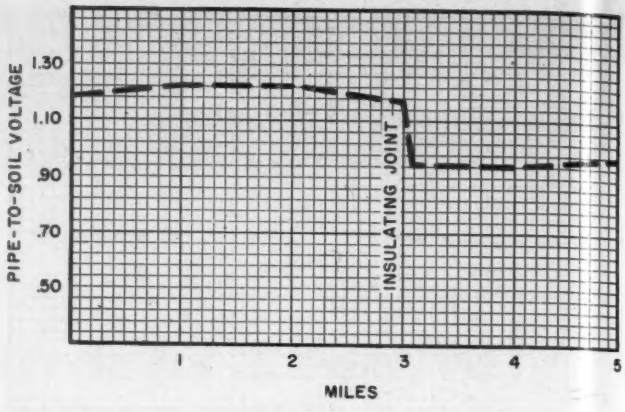


FIG. 8.

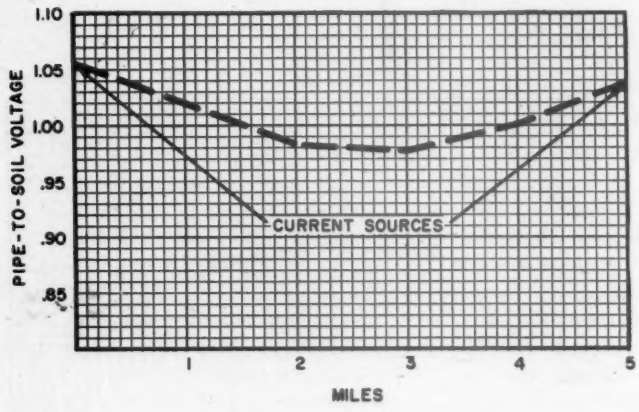


FIG. 9.

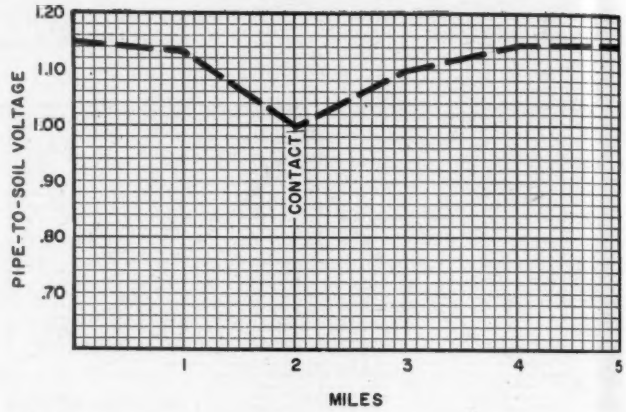


FIG. 10.

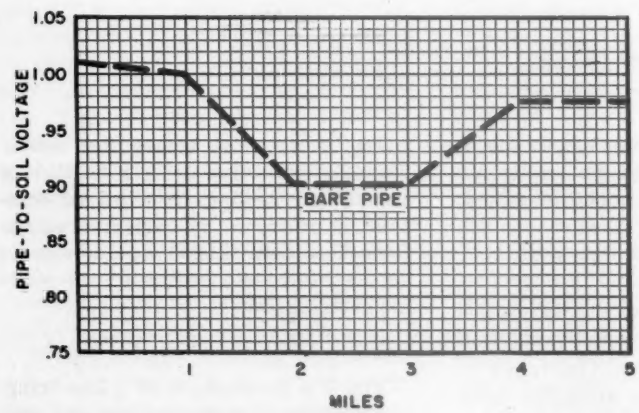


FIG. 11.

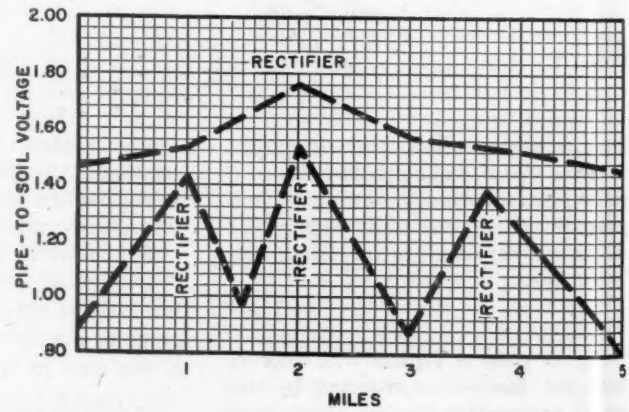


FIG. 12.

tinuous electrical path, it is necessary to locate and bond these joints. Plotting these readings graphically can help locate them.

Fig. 9 plots readings taken along a line protected at either end by draining current from other lines—or a coated line between two cathodically protected lines. Enough current is drained at each end to cathodically protect the entire line.

Fig. 10 indicates a coated line under cathodic protection, but having an accidental contact with an unprotected foreign structure such as another pipeline. This is a common occurrence and, if of any magnitude, is readily apparent upon plotting pipe-to-soil readings. This graph is similar to Fig. 6 and is a similar situation.

Fig. 11 shows a section of bare pipe tied into a coated line that has protective current applied. The apparent trough in the line indicates a lower degree of protection at that point. A graph of this type is a valuable tool in locating sections of bare pipe not shown on maps and records.

Fig. 12 is a typical graph *(lower line)* **of bare pipe being protected by several rectifiers;** *(upper line)* **a similar coated pipe, protected by a single rectifier.** It is obvious from this comparison that much better current distribution is obtained on coated lines.

These are only a few of the types of graphs used in cathodic protection work; it is not meant to imply that these 12 examples cover all cases. Use of simple mathematical graphs of pipe-to-soil readings is recommended to anyone seriously interested in corrosion control of underground piping; in many cases they will greatly simplify the job of control. * * *

10 RULES ON . . .

How To Write Good Publicity

Paul Lockwood

NEWS ABOUT YOU AND YOUR GAS COMPANY is good advertising. It keeps your name before the public in a most favorable way. It will help you build prestige and good will in an effective, inexpensive way.

A word of caution: Publicity should never be used to replace your regular paid advertising. Use it to implement your advertising — not to replace it!

Here are some fundamental rules for writing and presenting publicity to your newspaper . . . ideas that will make your publicity task easier and give your copy news value for your newspaper and advertising value for your gas company.

Know Your Editor

One of the best investments in time you can make is to get to know your local newspaper editor. Contrary to the Hollywood idea of a typical editor who is a hard-drinking, swearing tyrant, you will find most editors are just as human as you are. They are fine people.

Editors have plenty of problems in their business . . . just as you do in your gas company. They work toward a deadline that puts more pressure on them than people engaged in other types of business. Yet, you will find your local editor a well-informed, friendly person who wants the news you can give him.

You will want to know how your editor will react to the "news" you submit. He knows what is going on in your area — probably better than anyone else. He can feel the pulse of your community. He knows what is news — what his readers want to read. And, he has an over-sized waste basket that holds all the "news" that he does not feel will be news to his readers.

Know Your Newspaper

You have probably been reading your local newspaper for years. But, when you start to prepare publicity for it you will need to read with a different viewpoint. As you read each story published in the paper, ask yourself these questions:

What is the news value of this story?

What makes it so interesting?

How is it written?

What news angle is used to give it more news value?

You will need to know other things about your newspaper. Are certain types of articles published on certain days? For instance, some papers publish news of certain surburban areas on certain days. Social news gets a bigger play on certain days in some newspapers.

Check to be sure you know the production schedule of the newspaper. When must articles be in the hands of the editor for publication in a certain issue? A daily paper published in the morning will have a different deadline than an evening paper. Two weekly papers may have two different deadlines for publicity releases. Check to be sure your copy arrives in time for publication while it is news.

Know Your News Angle

There are countless happenings around your gas company that make news. A birth, a marriage, a promotion, a new employee, a new piece of equipment, a special event such as an anniversary, an election to some office in your club, lodge, church, or association, family news of you and your employees, social functions, sports activities, etc.

Once you have started on your program of developing publicity about your business, you will find that there is a never-ending stream of events that make news — good local news for your paper and good publicity for your gas company.

To avoid having your publicity reach file 13 (the editors over-sized waste basket), you will want to observe the following fundamental rules of preparing publicity . . . rules that will save your editor time and give your "news" a better-than-average chance of being printed.

Make It Readable

Editors are busy people. They do not have time to decipher handwritten news stories you may submit. By all means be sure that your copy is typed. Use standard size, 8½ by 11-in. paper. Double space your copy so editorial changes can be made easily. Leave plenty of margin — both left and right. Start the story about one-third or one-half of the way down the page.

Identify Yourself

If you use your regular letterhead paper, the editor will have the information needed on any details of your story. If you use plain paper, be sure that you include your name, address, and telephone number so the editor can reach you quickly for any questions he has about the article.

Trying to sneak in copy without any information about who sent it is useless. Most editors will disregard this copy just as they will an unsigned letter in the *Letters to the Editor* column of the paper.

Set Release Date

Many of your publicity releases will be developed before the event is to take place. For instance, suppose you are going to attend a gas company executives' convention. You will prepare this story before you leave and will want it written as if you were in attendance at the convention.

Thus, you will need to set a release date for your copy. You can use several styles for this such as the following:

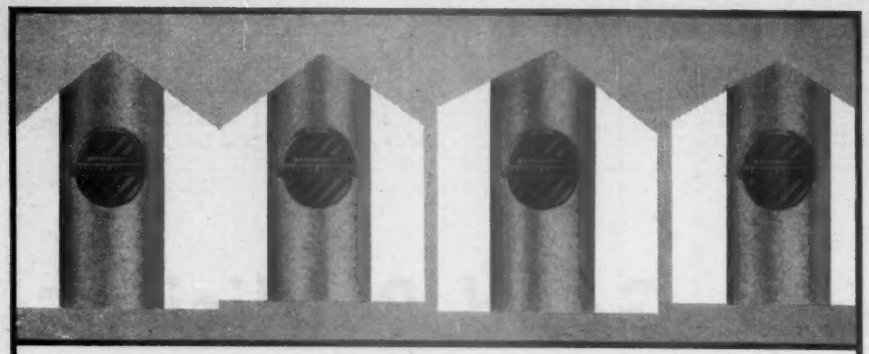
For immediate release

Publish at will

For publication after (date)

Not to be published before (date)

When you specify a date, be sure that your copy arrives on the editor's



MORE METALBESTOS "SAFETY SEALS"

MEAN FEWER SERVICE CALLS

Gas vents displaying the red-and-black Metalbestos "Safety Seal" will never be responsible for sending utility service-trucks to answer customer complaints. That's because the "Safety Seal" means an all-Metalbestos gas vent, designed and installed according to the Metalbestos "Safety System" Gas Vent Tables.

The Metalbestos "Safety Seal" stands for scientific gas venting . . . free from home-polluting spillage at the draft hood and corrosive condensation within the vent. Look for the Metalbestos "Safety Seal" and promote its use. It's good for your business . . . good for gas.

For complete information on the new Metalbestos "Safety System," write Dept.

Stocked by principal distributors in major cities. Factory warehouses in Akron, Atlanta, Dallas, Des Moines, Los Angeles Chicago, New Orleans Woodbridge, N. J

METALBESTOS DIVISION
WILLIAM WALLACE COMPANY · BELMONT, CALIF.

desk in time for this publication date. For instance, setting a date of "after June 1" and mailing your copy on June 2 will defeat its purpose. When you set a date be sure it arrives on the editor's desk before that date.

Use a Date Line

The date line may not be used in your local newspaper for local releases. However, it is good form to submit it this way. If the editor does not want to use it, he can remove it quickly and easily. A standard form for this date line is:

Hometown, Your State, July 1 (start of copy)

Write a Newspaper Lead

Your publicity release to your local newspaper should follow the fundamentals of newspaper writing . . . the five w's and the h. You want to be sure that you tell — *who, what, when, where, why* and *how*. Work as much of this into the first paragraph as possible. Use the following paragraphs to expand on the "why" and "how" . . . details that make the story more interesting, but that can be omitted if space requirements make it necessary.

Be Sure It Is Accurate

Names make news . . . if they are correct. Be sure that all names used in your publicity releases are 100 percent accurate. **Don't guess — check!**

On advance releases be sure that the event takes place. For instance, announcing that you are attending a convention in an advance release and then not going will make the story false. Editors should be informed of any changes in plans so the story can be killed or changed to make the story accurate.

Don't Use Pressure

You may be a consistent advertiser in your local newspaper. You feel you are entitled to a good break publicity-wise. Probably, you are; but don't try to use pressure to get publicity placed if you want it to do you the most good.

Most newspapers draw a sharp line between the editorial and advertising departments. One does not have influence on the other. And, when you try to bring in this type of high pressure on the editor, you may find that your copy will be more carefully checked than it might otherwise.

These 10 rules for preparing good publicity will help you implement your regular paid advertising program with local publicity about yourself, your gas company, your family, and your employees . . . news that will help you build prestige and good will in your community. * * *

Widening a main street entails a lot of work for gas distribution construction crews. In Wilmington, Delaware, crews of Delaware Power & Light are shown at work during recent widening project of 2750 ft of that city's Fourth Street. Due to width of street, gas mains are run on both sides. Approximately 900 ft of 4-in., 900 ft of 6-in., and 1700 ft of 8-in. new cast iron mains were laid on the project. The 4 and 6-in. replaced smaller mains or mains abandoned for various reasons. The 8-in. main was laid as a feeder main. Some 70 services were renewed because of age or inadequate size. Services smaller than 1¼-in. were renewed to 1¼-in. Renewal of other 1¼-in. services was made by pulling 1-in. copper tubing through them. Other size services were renewed or replaced with coated steel pipe.

"WHERE GAS IS GROWING"

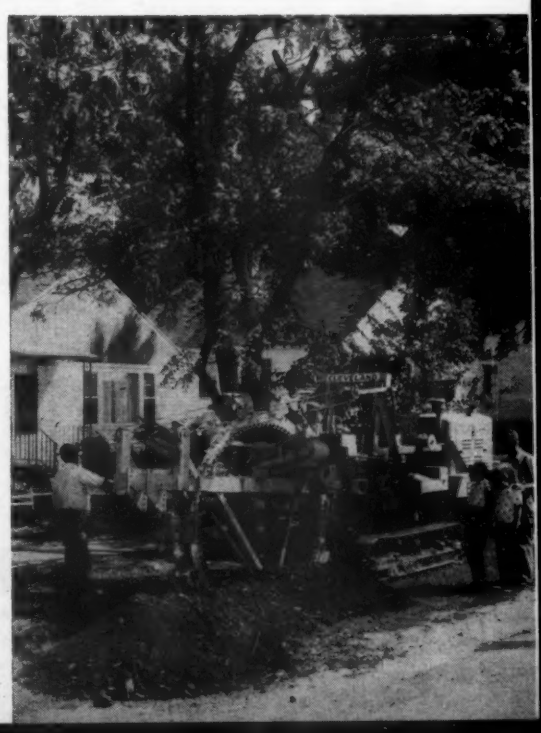
Distribution Developments

NEWS ABOUT CURRENT AND PLANNED CONSTRUCTION

Municipal Gas Department, City of Henderson, Kentucky, is currently working on installation of 20,000 ft of 6-in., 5000 ft of 4-in., and 5000 ft of 2-in., all high pressure mains in the city service area. Work is also well underway on 5000 ft of 1-in. high pressure service lines and 2000 ft of 1¼-in. low pressure service lines. All work is being done by the department's crews.

Las Cruces, New Mexico's Municipal Gas System, during 1958, estimates installation of 2000 ft of 6-in. intermediate pressure mains, 6000 ft of 3 and 4-in. intermediate pressure mains, and 2500 ft of 2-in. intermediate pressure mains. Approximately 7000 ft of 2-in. high pressure main is also estimated for the year. All construction and installation is performed by company crews.

Long Island Lighting Company, Garden City, New York, has completed or is nearing completion on numerous projects of its 1958 construction program. In Nassau County, Hallen Construction Company, contractor, is installing 34,500 ft of 20-in. high pressure trunk main. Between Hicksville and Commack, Karlson & Reed, contractor, has completed installation of 70,500 ft of 16-in. high pressure trunk main. Other trunk main installations include 12,000 ft of 8-in. from Oakdale to Sayville; 16,500 ft of 8-in. in the Commack area, and 21,000 ft of 12-in. at Massapequa, with all work performed by contractor Karlson & Reed. High pressure distribution main installations include 4800 ft of 8-in. at Glen Cove and 20,000 ft of 8-in. at Smithtown, the latter by Karlson & Reed.



Sidewalk superintendents. Northern Illinois Gas Company supervisor Pat Homerding explains to Connie Wohling, 9, and Carol Braun, 8, details on installation of gas main in Beecher, Illinois, during coming of natural gas to the town recently.

DIG MORE DIRT FOR LESS MONEY WITH A Pow-R-Ditcher

Model 4T Pow-R-Ditcher

Here's a real workhorse that digs for LESS because it costs so much LESS! Ideal for the light construction field in laying gas pipe, water and cable lines and digging home foundation footings. Very maneuverable for those "tight spots", the 4T is only 6' high, 13' long and 48" wide. Digs 6" to 14" wide and up to 17' per minute. Handles most small ditching jobs at a fraction of the cost of more expensive ditching machinery.

"Small W-2 Pow-R-Ditcher is Finest for Small Services"

. . . says Post and Lee Service of Alta, Iowa. "In one month we completed over 100 services (7100 feet). It was rugged work but the W-2 handled it with no breakdowns except a pair of belts. We keep ahead of schedule with the W-2." The W-2 digs 2½" to 4" wide and is ideal for gas service, electrical service and shallow water lines.

Write For Literature and Low Prices on the Complete Vermeer Pow-R-Ditcher Line

Larger Pow-R-Ditcher models also available. Check the performance, quality and price before you buy. Our nearby Vermeer dealer will be happy to arrange a demonstration.

VERMEER MANUFACTURING CO.

1451 W. WASHINGTON • PELLA, IOWA

Natural Gas Comes to St. Mary's

Three months' work by four crews totaling 100 men produced a new natural gas distribution system embracing 115,000 ft of 2 thru 10-in. pipe in St. Mary's, Ontario, for Union Gas Company of Canada, Ltd. Crews of contractor J. W. Caine are shown at work, above, lining up coated pipe of a branch main prior to welding. **Center photo:** Careful attention is given lawn before digging trench. Sod squares are carefully removed (see left of photo), then replaced after pipe is installed, leaving lawn good as new. **Bottom photo:** Backhoe's big bite does the hard work in cutting trench, but time-proved method of muscle and shovel is needed to clean around other utility lines that gas main must cross.

Facts 'n Figures . . .

FOR THE FOURTH MONTH IN A ROW, August shipments of **residential central heating units** ran substantially above 1957, 12.5 percent more units than in the same month last year. Furnaces of the forced warm air and gravity types gained 19.6 percent over last year; gas boilers were up 21.7 percent but conversion burners dropped 15.2 percent. **Automatic gas water heaters** showed a 3.9 percent gain. **Ranges** continued to decline with a 14.6 percent total below last year. Built-ins tried unsuccessfully to bolster the combined total slump with its substantial gain of 24.7 percent. Free-standing gas ranges declined 18.6 percent in August, and 13.2 percent for the eight-month period. August factory sales of gas dryers showed a monthly increase of 79 percent from July but were down 5 percent from August of last year.

GAS UTILITY AND PIPELINE INDUSTRY sales for the year ending July 31 gained 5.6 percent or a total of 79.1 billion therms. July sales were off only 1.9 percent from a year ago while the nation's industrial production as measured by the Federal Reserve Board index was off 8.3 percent.

IN THE FOURTH MONTH of record construction contracts, August scored a 23 percent increase over last year to accent in very "positive terms the resumption of nation's postwar growth trend," reports F. W. Dodge Corporation, construction news specialists. Growth potentials appear strong indicating continuing construction demand for some time to come. Recent improvement in private construction activity is a particularly favorable factor. Residential building contracts—for 113,460 dwelling units—registered a 13 percent increase.

NET NEW INDUSTRIAL FURNACE orders in August were only 10 percent below last year's volume. Eight-month period total is down 39 percent from the same period of 1957. While industrial furnace groups appears to have leveled off at about $3,500,000 volume monthly during most of 1958, the induction heating group continues to falter with declines of 24 percent for August and 72 percent in volume for the 8-month period.

STRONG DEMANDS FOR NATURAL GAS common stocks during August buoyed the index to a new all-time high average price of $45.53. Distribution company common stocks reached record high of $34.08 a share during the week of August 8 for a 25.1 percent increase over a year ago. Dividends average $1.55 a share for a yield of 4.56 percent.

GAS INDUSTRY SALES REVENUES exceeded $4 billion for the first time in 1957 to set a new all-time record—a gain of 7.4 percent over 1956 sales of gas to ultimate customers. Industry served an average 30.5 million customers a total of 77.4 billion therms. Net operating revenues rose 6.7 percent while net income advanced 4.7 percent. Relationship between net operating revenues and net utility plant, a rough indicator of rate of return, showed 6.3 percent in 1957, down from 6.7 percent in 1956.

BLUE RIDGE GAS COMPANY, Harrisonburg, Virginia, is to receive natural gas deliveries of 2,040 Mcf annually from Atlantic Seaboard Corporation, Charleston, West Virginia, according to a recent FPC directive. Annual deliveries and peak day delivery of 2,040 Mcf are Blue Ridge's estimates for its third-year requirements.

A.G.A.-S.E.G.A. ANNUAL TEXTILE SYMPOSIUM, considered one of the most significant steps ever taken by two major industries, will be continued in future years as result of a unanimous approval of delegates from the gas and textile industries attending the second annual symposium in Greensboro, North Carolina. Sponsored by A.G.A. and the Southeastern Gas Association, the symposium affords leaders of the two industries an opportunity to discuss informally problems of the textile industry in the area of heat application to processing operations.

FOUR WINNERS OF THE ESSAY CONTEST, "What I Think Of the 1958 NEGA Gas Measurement and Control School—And Why," sponsored by the New England Gas Association school committee are: First prize, Lawrence E. Crockett, Boston Gas Company; second prize, James E. Mackey, City of Holyoke, Gas and Electric Department; third prize, Harry A. Ball, Brockton Taunton Gas Company, and fourth prize, James M. Sweeney, City of Holyoke.

Association Notes . . .

NEW INGAA PRESIDENT, *Glenn W. Clark,* president of Mississippi River Fuel Corporation, was elected at the annual convention in New Orleans recently. He succeeds *J. J. Hedrick,* INGAA president the past two years. Hedrick is president of The Peoples Gas Light and Coke Company.

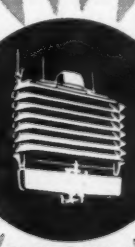
R. H. LUSSKY, Public Service Commission of West Virginia, has been appointed program chairman of the 1959 Appalachian Gas Measurement Short Course. *C. D. Rader,* Tennessee Gas Company, Columbia, Tennessee, will assume chairmanship of the general committee. About 700 gas industry men attended the recent 18th annual short course in Morgantown, West Virginia.

PACIFIC COAST GAS ASSOCIATION has elected *J. F. (Jack) Ray,* vice president of General Controls Company, the new vice president of the association for a two-year term.

NEW JERSEY GAS ASSOCIATION has elected *W. T. Potter,* Elizabethtown Consolidated Gas Company, president succeeding *Theodore H. Kendall.* Other officers elected were: *Frank C. Pesveyc,* Public Service Electric and Gas Company, first vice president; *W. Daniel Williams,* New Jersey Natural Gas Company, second vice president, and *Ralph E. Martin,* New Jersey Natural Gas Company, secretary-treasurer.

the infra-red radiant heater that HEATS LIKE THE SUN

panelbloc



DEPENDABLE • ECONOMICAL

Gas-fired Panelbloc Heaters are setting new standards of heating satisfaction. Panelblocs are low in first cost and are easily installed. No electrical connections are needed. There are no fans or blowers. No moving parts means long, quiet life.

Panelblocs have been installed in thousands of commercial and industrial buildings. They can heat the entire structure or any part of it.

Panelblocs heat objects and people—not the surrounding air.

Panelblocs are UL Listed and AGA approved. Any commercially available gas may be used—including LP. *WRITE FOR LITERATURE TODAY.*

Thermobloc Division
PRAT-DANIEL CORPORATION
13-11 Meadow St.
So. Norwalk, Conn.
In Canada — Canadian Wanson Combustion Equipment Ltd.
164 Metcalfe, Montreal

Gentlemen:
( ) Please rush literature on Panelbloc
( ) Have representative call
Name_____
Company_____
Address_____
City & State_____

Trade Topics . . .

ROBERTSHAW-FULTON CONTROLS COMPANY is building a $2,500,000 plant near Youngwood, Pennsylvania, to produce thermostatic control devices for home appliances and industry. Plant will replace present manufacturing facilities at Youngwood and nearby Scottdale operated by the Thermostat Division.

MIDCONTINENT TUBE SERVICE is erecting a new warehouse in Chicago to the rear of their main building. The area, one and one-half acres, is adjacent to 600 ft of private siding on the Chicago and Northwestern Railroad.

CORROSION SERVICES, Inc. of Tulsa is establishing new Cleveland, Ohio, office and warehouse. Hartley J. Davis, former Tulsa office manager, is new manager.

COOPER-BESSEMER HAS ACQUIRED Creole Engineering, Inc., Houston, Texas, as a wholly owned manufacturing and engineering subsidiary. T. E. Kraner, former district manager of C-B's Caracas, Venezuela, office, and more recently New Orleans office manager, heads the Houston operation as president. Creole will concentrate on packaged gas engine compressor units currently being marketed by C-B, but formerly packaged by other companies.

FROST ENGINEERING SERVICE COMPANY, Huntington Park, California, has been appointed exclusive Southern California distributor for F. H. Maloney Company pipeline specialty products.

PHILCO CORPORATION AND UPTIME CORPORATION of Rawlins, Wyoming, are developing and marketing a new high speed punched card reader that can read conventional punched cards, row by row, 80 columns wide, at the rate of 2000 cards per minute. Prototype model of the "Speedreader" 2000 invented by Raymond B. Larsen, president of Uptime, has been in operation for more than six months.

JOHN DEERE HAS CONSTRUCTED a new industrial manufacturing unit in Moline, Illinois, to produce attachments for use with industrial tractors. New one-story building occupies 89,000 sq ft of space and incorporates latest features in industrial building design. New 24,000 sq ft steel storage unit adjoins new building. Company also has four new additions to the Dubuque, Iowa, Tractor Works nearing completion that will add nearly 30 percent to the plant's capacity.

MERGER of Johns-Manville Corporation and L. O. F. Glass Fibers Company has been proposed on a non-taxable basis of one J-M share for two and one-half L.O.F. shares of common stock. L.O.F. Glass Fibers believes "each company ideally supplements the other" and plans to call a special meeting of stockholders at earliest practical date to ratify the merger. Plans include continuation of L.O.F. Glass operations with R. H. Barnard as president. Coupling of Johns-Manville's experience in industrial insulation and building material with L.O.F. Glass's knowledge and experience in the glass fiber industry are contemplated as favorable to both companies.

GENERAL PRECISION EQUIPMENT Corporation has expanded products and services of a major subsidiary and changed its name to reflect the expansion. GPE Controls, Inc. is the new name of Askania Regulator Company. Certain products and technical services of three other GPE subsidiaries, Librascope, Inc., Link Aviation, Inc., and Kearfott Company, have been integrated with GPEC products.

EBASCO SERVICES, INCORPORATED, is opening a new office in Milan, Italy. Arnold R. Beardsley, who supervised the management consulting and marketing operations of Mead Carney International Corporation the past seven years in Europe, heads Ebasco's new Italian office.

BLAW-KNOX COMPANY'S Buflovak Equipment Division has appointed James T. Langham of James T. Langham & Associates in Dallas sales representative for Blaw-Knox Gas Cleaners in tri-state area of Oklahoma, Louisiana, and Texas.

TAPECOAT COMPANY has formed a Canadian Company, Tapecoat Company of Canada, Ltd., to manufacture and distribute its protective coal tar coatings in tape form. J. Russell Wall, former district manager in the New York area, will be president of the Canadian corporation. Offices and manufacturing facilities are located in a new plant near Toronto.

DIXIE PRODUCTS, INC., has acquired most of the assets of the Magic Chef Division of Food Giant Markets, Inc. for an undisclosed price. Plans are to operate Magic Chef as a separate division of the company with its own marketing organization and sales effort.

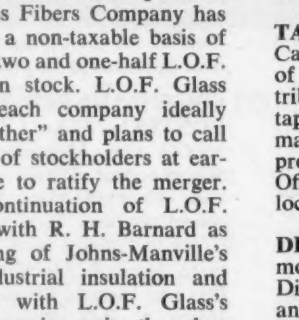
A FAVORITE EVERYWHERE . . . CROSE EQUIPMENT,

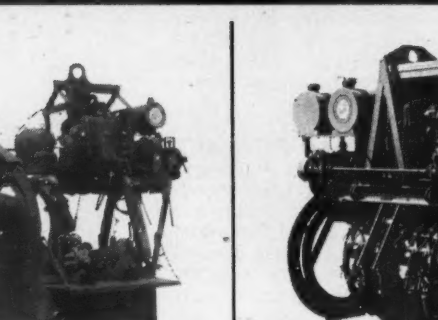
MATERIALS & SUPPLIES

FOR GAS DISTRIBUTION . . .
Construction and Maintenance Work

- CROSE CLEANING AND PRIMING MACHINES. In both line-traveling and stationary models . . . for faster, trouble-free service.
- CROSE COATING AND WRAPPING MACHINES. For uniform coating and precision wrapping . . . they coat Bends or "Egged" pipe. Models built for line-traveling or stationary use.
- BLUE FLAG L-O-F GLASS FIBER PIPE WRAP, JOHNS-MANVILLE FELT, SEALTIGHT PIPE SHIELDS.

Crose offers a most complete line of equipment for the gas distribution industry. Crose equipment, materials and supplies are always available to you on shortest notice—we have many strategic supply points and use fastest transportation methods. Always check first with Crose on any pipeline construction and maintenance needs.





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*Warehouses in 5 locations

Honor Roll . . .

A.G.A. AWARDS presented at the annual convention of the American Gas Association held in October included:

Operating Section's Distribution Achievement Award, presented to *Frederick G. Sandstrom,* Consolidated Edison Company of New York, Inc. The award, donated by American Meter Company, is given to an individual who has made an outstanding contribution to the science and art of gas distribution during the current year or an outstanding contribution that has gained acceptance during the past five years. Sandstrom has served since 1951 as chairman of the group that prepared the ASA Code for gas distribution and transmission piping systems.

Operating Section's Awards of Merit were presented to 20 leading gas industry operating engineers, including: *Herbert S. Blanding,* Consumers Power Company; *Alvan V. Brashear,* Michigan Consolidated Gas Company; *A. L. Bristow,* Northern Natural Gas Company; *Robert S. Emanuel,* Public Service Electric and Gas Company; *Thomas B. Kelley,* Texas Eastern Transmission Corporation; *Hermann Laudani,* Mystic Valley Gas Company; *Hugh T. Libby,* British Columbia Electric Company, Ltd.; *N. A. Manfred,* Chicago District Pipeline Company; *Elmer O. Mattocks,* American Petroleum Institute; *Dr. C. Gordon Milbourne,* United Engineers & Constructors, Inc.; *Pat H. Miller,* Texas Eastern Transmission Corporation; *David C. Palm,* Natural Gas Pipeline Company of America, and *Charles U. Pittman,* Koppers Company, Inc. Also *Charles J. Sevey,* Southern California Gas Company; *Charles E. Terrell,* Southern Natural Gas Company; *Edwin F. Trunk,* Laclede Gas Company; *Joseph V. Turpish,* Elizabethtown Consolidated Gas Company; *Chester E. Upson;* Natural Gas Pipeline Company of America; *J. G. Voelker,* Central Hudson Gas & Electric Corporation and *D. K. Wilson,* Niagara Mohawk Power Corporation.

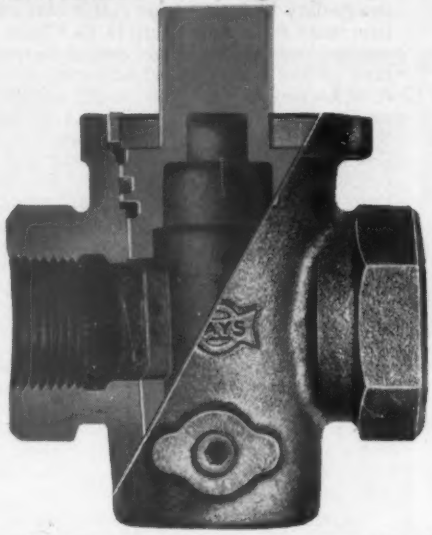
Industrial-Commercial Award was presented to *Everett V. K. Schutt,* industrial gas engineer for Central Hudson Gas & Electric Corporation. Established last year and sponsored by the Moore Publishing Company, the award was presented for Schutt's contributions of the application of gas in the textile field, benefiting both his company and the gas industry at large.

Order of Accounting Merit Awards were presented to four gas utility accounting leaders—*James F. Daly,* Long Island Lighting Company; *Conrad F. Mills,* Philadelphia Electric Company; *Edward K. Schneider,* The East Ohio Gas Company; and *Ohmer Ullery,* Columbia Gas System Service Corporation.

Safety Achievement Awards were presented to 13 gas companies.

Competing by size, winners among the natural gas companies were: (1501 or more employees) *Northern Indiana Public Service Company;* (501 to 1500) *Central Illinois Light Company;* (101 to 500) *Iowa Public Service Company;* and (100 or less) *Wisconsin Southern Gas Company.* Winners among the manufactured and mixed gas companies grouped by size were: (1501 or more employees) *Iroquois Gas Corporation;* (501 to 1500) *Citizens Gas & Coke Utility;* (101 to 500) *The Hartford Gas Company;* and (100 or less) *Superior Water, Light & Power Company.*

THIS GAS STOP WILL NOT STICK . . .



- A newly designed HAYS Lubricated and Tamper-Proof Gas Stop . . .
- Stop is completely lubricated at the factory . . .
- Four Grooves in body, and Lubricant Plug provide for pressure re-lubrication . . .
- Locking Pin positively prevents tampering at top of stop . . .
- O-Ring prevents top leakage . . .
- Teflon Coated Gland Ring reduces friction between top of plug and gland ring...

Re-Lubrication does the TRICK

HAYS LUBRICATED TAMPER-PROOF SAFETY GAS STOP*

- Lower initial and turning torque . . .
- Extra grade gray iron body, gas service bronze plug . . .
- Individually tested . . .
- Black or Galvanized, Flat Head or Lockwing Pattern...
- Sizes: ¾", 1", 1¼", 1½", 2", for 125 psi. W. P.

Write for Folder 121 and prices.

*Patent applied for.

NEW . . . Solid Bottom Construction Prevents Leakage and Tampering

HAYS®

GAS SERVICE PRODUCTS

HAYS MANUFACTURING CO.

ERIE, PA.

Product Previews

FOR THE GAS DISTRIBUTION INDUSTRY

For more information on items described here in brief, use the handy reply card and circle the corresponding numbers

Three new lines of pilot burner assemblies have been added by Eclipse Fuel Engineering Company. The extended pilot burner line consists of series of unusually long pilot burners, gas-fired, and internally spark-ignited that may be used for igniting main gas burners too remotely placed for standard pilot burner ignition. "EP" burners are ignited by means of spark electrode inside the burner tube with ignition occurring at the burner. New flame rectification gas ignitor assemblies have an atmospheric mixer and injector. New draft compensation pilot is designed to solve problems encountered when piloting appliances have varying drafts.

CIRCLE (42) ON THE REPLY CARD

Versatile new Pearson-type detector can save money by locating "holidays" in coatings on newly-installed pipe before it goes into service. Even minute perforations in protective coatings can be found without uncovering the pipe with the new Tinker & Rasor detector. Unit can locate electrical shorting between 2 lines or between a line and some other metal structure. Finally, it can trace an individual line —including its branches—through a maze of buried pipe in city streets when systems are not electrically connected, even when line is closely paralleled or stacked with other lines in one trench. Transistorized, super sensitive unit is battery-powered, weighs less than 20 lb, needs only 2 men to operate it in the field.

CIRCLE (43) ON THE REPLY CARD

Low Cost Zone Control Package for Hot Water Heating. New White-Rodgers zone control package for hydronic heating that provides multiple zone control using only one circulator and one relay, can save up to 75 percent in costs. Fashion thermostat and small motorized water valve maintain desired temperature in each zone, eliminating need for extra circulators, relays, and flow control valves. New low-cost system meets FHA requirements for zoning split level homes, and can be applied to existing as well as new installations. Major benefits result from savings in piping, fittings, wiring, and labor, because all zones in installation use common return and low voltage wiring.

CIRCLE (44) ON THE REPLY CARD

Hydraulic Cast Iron Pipe Cutter. New heavy-duty hydraulic pipe cutter cuts cast iron main from 4 to 12-in. O/D. Chain is wrapped around pipe and pulled through jaws to the nearest ring; adjusting screw is tightened to take up slack, and hydraulic pressure applied by hand or electric pump gives a clean, accurate cut in less than a minute. No vise or turning is required, and pipe can be cut in ditch, in line, or anywhere chain can be wrapped around pipe.

CIRCLE (45) ON THE REPLY CARD

FREE — three-part table for converting any size pipe (from ½ to 26-in. diameter) to equivalent 3-in. pipe for use in calculations on unaccounted-for gas and leakage reduction problems. *Available to all readers using the "ready-reply" card to obtain additional information on other items described in "Product Previews" and "Bulletin Board" departments of* AMERICAN GAS JOURNAL.

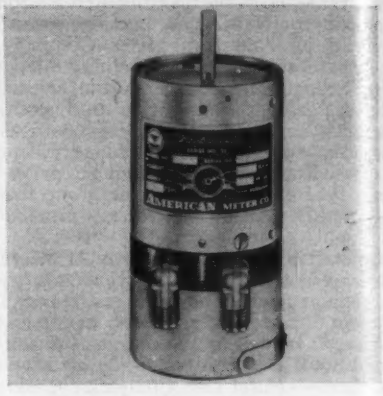
CIRCLE (46) ON THE REPLY CARD

Control for Cooking Ranges. New sensing head at center of burner is part of "Flame Set" control developed by Robertshaw-Fulton Controls that permits homemaker to select flame height and temperature. Eliminates waste fuel and scorched pans, and insures accurate temperature control on top burner regardless of size, shape, or material of cooking utensil.

CIRCLE (47) ON THE REPLY CARD

Pipe Coupling Shopcoat. Dresser has developed a durable shopcoat for pipe couplings that will give over 6 months of protection against corrosion. This is an important factor when couplings are kept in open storage at the job site months before use. A distinctive shade of red, Dresser's Red "D" resists dirt adherence, is non-toxic to potable water, and is compatible with 95 percent of the field coating systems in use today.

CIRCLE (48) ON THE REPLY CARD



Therms Tick Off Time! New gas-powered instrument clock — the "Gasclok" — can be used as either original or replacement equipment in all makes and types of recording instruments. Unit is a completely self-contained gas-powered instrument drive and timing device. Field tested and designed for operation in remote installations on all types of instruments requiring chart records from 1-hour to 30-day periods, including integrating orifice meters, strip chart records, gas lift meters, or pressure recorders. Inherently explosion proof, and internally sealed to prevent corrosion or clogging.

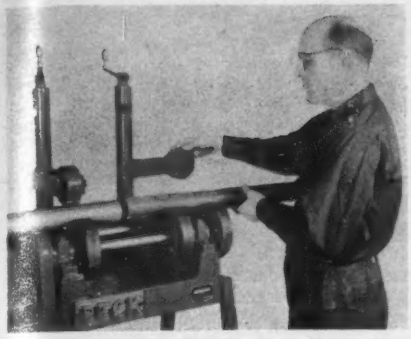
CIRCLE (49) ON THE REPLY CARD

Degree Day Measuring Device. New Johnson fuel-demand meter registers total accumulated effective degree days — defined as the net effect of temperature, sun, and wind upon fuel consumption. Weather-sensitive element fastened to roof connects by electrical cable to inside recording unit. Instrument gages range from 65 F base to —35 F, has reset mechanism so total can be set to any accumulated reading. Meter registers total accumulated effective degree days for complete heating season.

CIRCLE (50) ON THE REPLY CARD

Need Loader or Backhoe? Attachments made by Shawnee Manufacturing Company have been approved by Allis-Chalmers for use on its D-14 and D-17 tractors. Loader for the D-17 can lift 3500 lb and dump from 9 ft height; backhoe units can reach behind the axle over 20 ft and dig nearly 15 ft deep. For the D-14, Shawnee has a special heavy duty loader with a lifting capacity of 2000 lb and dumping height of 8½ ft, and a backhoe that can swing uninterrupted for 188 deg.

CIRCLE (51) ON THE REPLY CARD

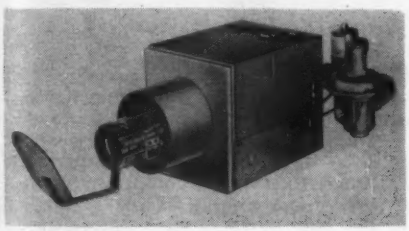


Pipe Rotator. New pipe rotating machine that speeds welding of pipe up to 5-in. diameter has been developed by Cecil C. Peck Company for use where long pipe runs can be pre-welded before erection.

CIRCLE (52) ON THE REPLY CARD

Forged Steel Gate Valves. New line of forged steel gate valves, new in design and compactly built for installation in cramped quarters, is being introduced by The Lunkenheimer Company. Valves feature bolted bonnet design, with outside screw rising stem, solid-wedge disc, and rolled in seat rings. They are available with screwed or socket welding ends in sizes ½- through 2-in. and are rated 800 lb at 850 F and 2000 lb at 100 F.

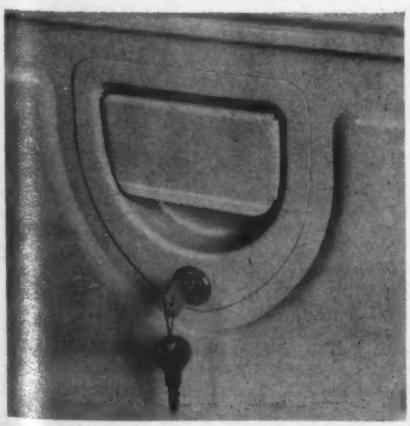
CIRCLE (53) ON THE REPLY CARD



Inshot Burner. Columbia Burner Company has introduced an improved inshot burner that features simple easy installation. The easy-to-locate burner mounting plate is secured first. Next, the burner assembly is inserted into the blast tube and by securing two screws on the sides and bottom, the inshot burner is installed.

CIRCLE (54) ON THE REPLY CARD

Paddle Locks for Service Body Doors. New slam-action, safety-catch paddle locks are among advanced features in the new line of Morrison Service and Utility



Bodies. The locks (patents pending) are part of an extensive new design program to increase serviceability, loading ease and operating economy of service bodies.

CIRCLE (55) ON THE REPLY CARD

Clevelands fit your gas construction requirements.

Good Everywhere

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Product Previews

Inhaling Hammer. New Thor air hammer "inhales" dust and chips, providing positive solution to dust problems in drilling concrete, brick, plaster, and other masonry. Unit sucks in drilling dust through hollow drilling steel with dust moving out ports in the back head of the tool and into special dust-extracting tanks.

CIRCLE (56) ON THE REPLY CARD

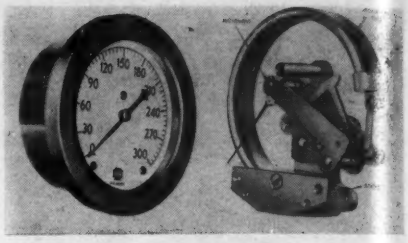
New Aluminum Soldering Flux. New aluminum soldering flux providing an instantaneous capillary action so pronounced that it draws solder up between two pieces of aluminum held in a vertical position to make a perfect bond, has been announced by American Solder & Flux Company.

CIRCLE (57) ON THE REPLY CARD

Warning Flags. Davis Emergency Equipment Company had added a new type barricade warning flag that can be seen by night or day. Made of 100 percent ingrain nylon material in neon red color, new "Saflags" are both fluorescent and iridescent. Diagonal stays to hold them open on ¾ by 27-in. staffs crisscrossed on a swivel base that mounts on a traffic cone; two 6 by 7-in. "Saflags" for use on 18-in. cones.

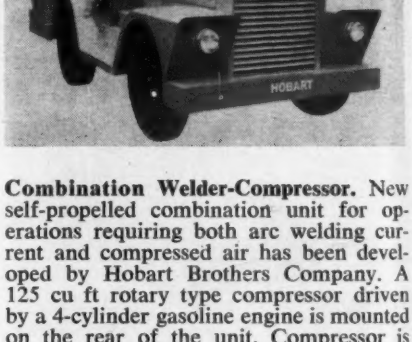
CIRCLE (58) ON THE REPLY CARD

General Purpose Pressure Gages. U. S. Gauge now has in production a line of pressure gages, designated the "A-Line," that are modern counterparts of their 500 series, with important design improvements in accuracy, case styles, movements, bourdon tubes, and optional extras. Cost-



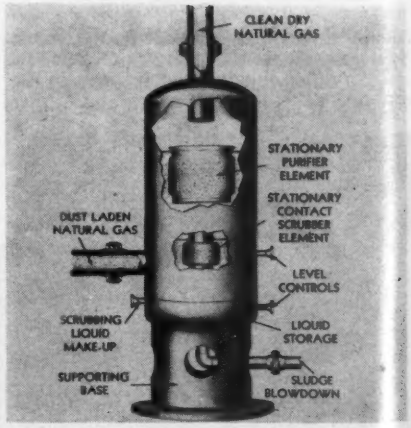
wise, the line fits in between the high accuracy "Supergauge" line and the less costly drawn steel case models. The A-line gages meet ASA Grade A standards with guaranteed accuracies within 1 percent of scale range for the middle half of the scale where readings are generally taken and 1½ percent of scale for the remainder. Line is designed specifically for a broad range of industrial applications which do not need higher accuracy of Grade AA gages.

CIRCLE (59) ON THE REPLY CARD



Combination Welder-Compressor. New self-propelled combination unit for operations requiring both arc welding current and compressed air has been developed by Hobart Brothers Company. A 125 cu ft rotary type compressor driven by a 4-cylinder gasoline engine is mounted on the rear of the unit. Compressor is completely self contained except that it draws gasoline from a common fuel tank. The welder is a 600 amp d-c unit driven by a Chrysler V-8 engine that also drives the vehicle. Unit is equipped with hydraulic power steering.

CIRCLE (60) ON THE REPLY CARD

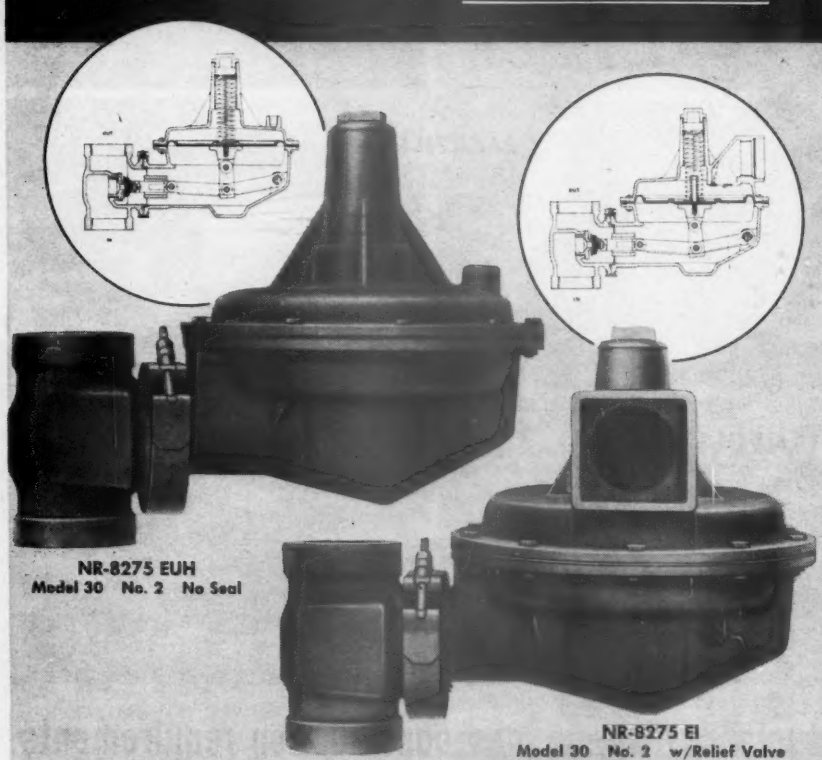


Gas Filter. New type Hi-eF scrubber, Type LDW, obtains an exceptionally high degree of dust recovery from natural gas. The new purifier is designed specifically for installation in distribution mains. Developed by V. D. Anderson Company, the multiple unit extracts dust from the gas by use of an impingement baffle, centrifugal force, and wet scrubbing.

CIRCLE (61) ON THE REPLY CARD

REYNOLDS

NR 8275 SERIES... Regulator that has Everything!



NR-8275 EUH
Model 30 No. 2 No Seal

NR-8275 EI
Model 30 No. 2 w/Relief Valve

VARIATIONS IN CONSTRUCTION COVER ALL REQUIREMENTS

Inlet unit size 1" to 2" I.P.S. screw connection and 2" flange connection • 360° installation • Inlet pressure ½# to 125 psi • Outlet pressure 3" W.C. to 3 psig • Orifice range ¼" to ¾" • Capacity 500-3000 cubic feet under all inlet conditions • Built-in relief valve with 6000 cubic feet per hour, capacity, with 1 psi on meter • Four position vent location • Vent pipe size 2" with stainless steel screen • Stainless steel band clamp • Interchangeable with Reynolds NR-8310 Series.

GAS CONTROL SINCE 1892

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ANDERSON, INDIANA

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Editor: Dean Hale, 800 Davis Bldg., Dallas, Texas.

Business Manager: Joe B. Woods, 800 Davis Bldg., Dallas, Texas.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the name and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)

The Petroleum Engineer Publishing Company, 800 Davis Bldg., Dallas, Texas.

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Dean Hale, Editor.

Sworn to and subscribed before me this 1st day of October 1958.

(Seal) Lillian H. Johnston

Notary Public, Dallas County.

(My commission expires June 1, 1959.)

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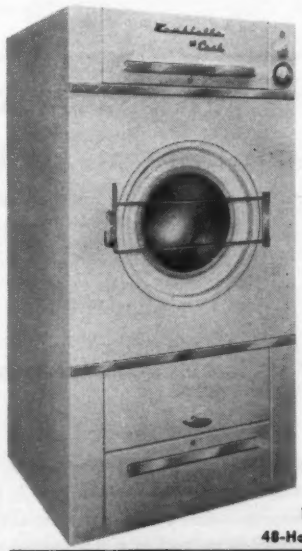

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Bulletin Board

NEW BOOKS...BROCHURES...CATALOGS

For more information on items described here in brief, use the handy reply card and circle the corresponding numbers

Plastic Pipe Manual. Detailed information for selection and application of polyvinyl chloride pipe, tubing, and fittings is given in new 2-color 16-page manual. Thoroughly illustrated with photographs, charts, and tables, bulletin covers normal and high-impact PVC, new Schedule 40, 80, and 120 PVC fittings; comparative costs of PVC and comparable metal piping; mechanical thermal, and electrical properties; pipe and tubing sizes and specifications and fitting types, sizes, and dimensions.

CIRCLE (91) ON THE REPLY CARD

Customer Service Training Film. New 20-minute full color film-strip and recording points out good practices, good relations and legal responsibilities of utility's customer service. Titled "Feel Good Again," it presents public relations in customer service in an interesting and informative manner that would be effective with every utility service department.

CIRCLE (92) ON THE REPLY CARD

Maintenance Manual for Valve-Regulators. Installation, operation, and maintenance instructions for valve-regulators are described in new 16-page photo-illustrated manual. Typical installations, mounting arrangements and piping arrangements are illustrated in the manual. Also included are line, cutaway and schematic drawings and characteristic curves for the valve positioner. Special sections are devoted to typical operational troubles, how to check troubles, orifice and nozzle cleaning, and how the positioner and controller works.

CIRCLE (93) ON THE REPLY CARD

Steel Storage and Wardrobe Cabinets. New 4-page bulletin describes line of steel storage cabinets and illustrates eight cabinet styles for use in offices, store rooms, and industrial plants. Illustrations, descriptions, and complete size data is given for each style cabinet.

CIRCLE (94) ON THE REPLY CARD

Gradiant Heating in the Steel Mill. Illustrated, 28-page booklet describes steel heating equipment which develops desired product quality in minimum time with maximum efficiency and with the use of automated and compact equipment. Automated, high-speed furnaces are described for modern steel mill—rolling mill and forge shop, foundry, strip mill, tube mill, bar and wire mill, galvanizing and tinning shops, coke-oven by-product plant, and laboratory.

CIRCLE (95) ON THE REPLY CARD

How adjustable storage racks can save many square feet of floor area in plants and warehouses is described pictorially in new brochure. Racks may be used to store pipe, valves, and parts. Racks are custom built for any storage requirement and can be used in single, double, or multiple sections. They can also be galvanized for outside use.

CIRCLE (96) ON THE REPLY CARD

Appliance Markers. New adhesive-backed plastic film for marking appliances with brand names, specifications, and operating instructions is described in new brochure. Film sticks at a touch, yet is very durable. Made in white, red, yellow, black, blue, and aluminum finishes, film can be silk-screen printed and die-cut to any shape.

CIRCLE (97) ON THE REPLY CARD

Flaring Tool. New bulletin describes 45-deg flaring tool that provides faster, practically foolproof operation and assures accurate flare size. New tool features self gaging, chevron gripping action and high strength flare radius. Chevron gripping action eliminates continuous indentations around tube circumference that causes stress points and subsequent flare weakness. Flares on 6 different tube sizes — 3/16, ¼, 5/16, ⅜, ½, and ⅝-in. OD— can be made. Companion tool contains same features for 37-deg flaring.

CIRCLE (98) ON THE REPLY CARD

Thermometer Brochure. New illustrated 8-page booklet lists specifications and prices on more than 100 stainless steel angle form, straight form, and special-purpose thermometers.

CIRCLE (99) ON THE REPLY CARD

Blowers. Revised 8-page bulletin includes new capacities and pressure ratings of Roots-Connersville Type AF rotary positive blowers. Detailed design and construction information is presented together with essential technical data to aid the engineer in selection and application of this equipment in a wide range of process industries, for either vacuum or pressure.

CIRCLE (100) ON THE REPLY CARD

Lightweight Generator Set. Highlights of design, engineering, and construction features of the Allis-Chalmers G-226 portable, lightweight generator set are covered in new 3-fold catalog. Sketches showing in-use application of unit, engine cutaways, and photographs of numerous components are included.

CIRCLE (101) ON THE REPLY CARD

New Plastic Piping Material. Three-page engineering data bulletin describes new plastic piping material known as Type II ABS. Available in 4 pressure ratings, new material opens up new and different uses for plastic pipe previously possible only with conventional or Type I ABS pipe. Physical and mechanical properties, chemical resistance data, flow characteristics, and working pressure charts are listed.

CIRCLE (102) ON THE REPLY CARD

Control-Display Layout Kits. New 10-page booklet gives information, samples, and instructions on how to use special plastic laminated pictorials of standard controls and displays. More efficient method for layout of controls and displays on equipment panels and consoles is described. Also provided is information on performing maintenance analyses and schematic systems studies.

CIRCLE (103) ON THE REPLY CARD

Fittings and Flanges. Revised 48-page catalog of fittings and flanges used in gas distribution piping is now available. Additions include dimensional data on full-encirclement saddles, anchor forgings, gas distribution fittings, 125 lb light-weight taper-face flanges and 900 lb welding neck, slip-on and blind flanges. Allowable working pressure tables for gas distribution and transmission piping have been expanded to provide values for ASA code construction design factors A, B, C, and D. Allowable working pressures for gas distribution fittings are given. Special fittings such as 3R elbows, venturi reducers, and manifold fittings are also listed

CIRCLE (104) ON THE REPLY CARD

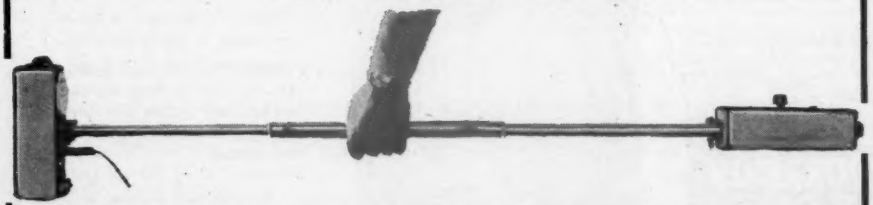
Manometer Catalog. New 24-page catalog includes sections on U-type, well-type (single and multi-tube) and inclined-tube manometers, manometer indicating liquids, and accessory equipment. Section on "Points to Consider in Selecting a Manometer" assists in determining best combination of manometer type, range, scale, indicating liquid, mounting and accessories for specific applications.

CIRCLE (105) ON THE REPLY CARD

THE NEW MINIATURIZED

WILKINSON Line Locator Model W-3

This radically new, powerful transistorized sub-surface locating instruments weighs only four pounds and is one-fourth the size of conventional pipe locators.



It's as handy as a flashlight; the transistors will rarely ever require replacing; non-leak mercury cells will last at least ten times longer. The maintenance is trivial. Molded glass fibre instrument cases insure maximum protection. The aluminum connecting handle telescopes to 17" and the entire instrument is packed in a substantial carrying case.

WILKINSON PRODUCTS COMPANY

3987 Chevy Chase Drive, PASADENA 3, CALIFORNIA. SYlvan 0-4314